Phase II Closure Report

For the

Remedial Response Action

At the

Denver Radium Superfund Site,

Operable Unit IX (ROBCO Site)

Denver, Colorado

March 1996

Submitted to

ERM-Rocky Mountain, Inc.

By

SVERDRUP CORPORATION

St. Louis, Missouri

Sverdrup

PHASE II CLOSURE REPORT

for the

REMEDIAL RESPONSE ACTION
DENVER RADIUM SUPERFUND SITE, OPERABLE UNIT IX
(ROBCO Site)
500 South Santa Fe Drive
Denver, Colorado 80223

March 22, 1996

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1.0 INTRODUCTION

The United States Environmental Protection Agency (EPA), the Colorado Department of Public Health and Environment (CDPHE), and Home Depot U.S.A., Inc., (Home Depot) signed an Agreement and Covenant Not to Sue to perform the Remedial Action (RA) to address metals-contaminated soils at Operable Unit IX (ROBCO) of the Denver Radium Site in a defined "shared" and "phased" manner. In general, the ROBCO site was excavated to expose soils above the Site Screening Criteria (SSC), contaminated soils were placed within the area of consolidation (AOC), and a cover will be constructed over the AOC.

EPA contracted with Sverdrup Corporation (Sverdrup) to complete Phase II of the RA. In Phase II, concrete foundations were demolished and rubblized, contaminated soil and debris were mixed with the rubble and placed within the AOC. Sverdrup contracted with Spectrum Services, Inc. (Spectrum), a small, disadvantaged business enterprise, to complete the Phase II construction.

Robinson Brick Company, the Site owner, agreed to complete Phases I and III of the RA prior to sale of the Site to Home Depot. Robinson Brick Company contracted with ERM - Enviroclean to construct Phases I and III of the RA. Phase I generally consisted of demolition of the existing railroad spur and asphalt pavement, construction of a new sanitary sewer excavation, stockpiling of soils below the SSC, and construction of the AOCs. Phase III will generally consist of covering the AOC with clean fill and a geotextile visual barrier which will prevent direct contact with , or inhalation or ingestion of metals-contaminated soils, and final site grading activities.

The ROBCO Site is located in south central Denver, Colorado at 500 South Santa Fe Drive in the Northwest 1/4 of Section 15 of Township 4 South, Range 68 West ("Site"). At the time of the RA, the property was owned by Robinson Brick Company and covers 17.3 acres in an area of Denver zoned for industrial use.

The Record of Decision (ROD) for the ROBCO Site selected a remedy prevents direct contact with, or inhalation or ingestion of metals-contaminated soils, in part, by covering the affected areas with a soil cover. In addition, the remedy provided for the continuation of down gradient ground water monitoring as a means of checking for off-site contaminant migration and institutional controls implemented.

The baseline risk assessment prepared by EPA and presented in the OU-IX ROBCO Site Record of Decision found arsenic, lead, and zinc present in site soils in concentrations which posed significant risks. Table 1 presents the metal contaminants that were managed in Phase II and their respective Site "risk-based" clean-up standard. The standards are compared with background concentrations and the highest concentrations measured during remedial design investigations.

TABLE 1

SOIL SITE SCREENING CRITERIA CONCENTRATIONS

SITE METAL CONTAMINANT	RISK-BASED CLEAN-UP STANDARD (mg/kg)	ON-SITE BACKGROUND CONCENTRATION (mg/kg)	HIGHEST ON-SITE CONCENTRATION ENCOUNTERED DURING RA (mg/kg)
ARSENIC	79	2	490
LEAD	1,000	30	35,800
ZINC	17,000	50	32,050

Phase II started on November 6, 1995, and was completed on March 6, 1996. The Phase II RA was performed following the guidance of the *ROBCO Site Remedial Response Closure Work Plan*, dated September 12, 1995; the *ROBCO Site Remedial Response Site-Specific Health and Safety Plan*, dated September 22, 1995; and the *ROBCO Site Remedial Response Action Construction Specifications and Drawings*, dated September 22, 1995; all of which were prepared by ERM-Rocky Mountain, Inc., the remedial design engineer (Site Engineer) for Robinson Brick Company.

This report is organized to discuss each major Phase II task, field change orders, and provide a statement of certification of Phase II completion. Attached to this report are the project record documents generated by Sverdrup and its subcontractor, Spectrum, during completion of the Phase II work.

2.0 GROUNDWATER MONITORING

Prior to implementation of any of the phased remedial response actions on the ROBCO Site, Sverdrup sampled and analyzed groundwater from the offsite monitoring wells. Onsite wells were sampled by ERM-Rocky Mountain, Inc. The purpose for this "round" of sampling was to establish a baseline for groundwater quality prior to site activity and prior to property transfer. The samples collected by Sverdrup were analyzed for TAL metals, cations and anions, and radioactive constituents.

Prior to the start of any phased remedial response actions, Sverdrup abandoned the onsite wells in accordance with the State of Colorado Engineer's Office requirements. Offsite wells were left in place for the purpose of future site groundwater monitoring by EPA. Future groundwater monitoring data will be collected by EPA and CDPHE to help evaluate Site post-closure status.

3.0 PHASE II RA SUBMITTALS

Prior to the start of Phase II, Spectrum submitted the following:

Performance and Payment Bond
Insurance Coverage
List of Key Subcontractors

During Phase II, Spectrum prepared and submitted (under separate cover) the following documents to the Engineer:

Materials List for Phase II
Proposed Project Schedule for Phase II
Contractor's Health and Safety Plan
Contractor's Materials Handling Plan
Weekly Summary Reports for each week of Phase II site work (see Appendix I).

3.1 Safety Plan Implementation

A Contractor Health and Safety Plan was prepared that required all work to be performed in accordance with applicable federal, state, local, and project requirements and procedures, and is fully compliant with 29 CFR 1910.120 requirements for projects involving possible hazardous material exposure. The objectives of the plan's approach to health and safety were to:

- provide a safe and healthy work environment;
- minimize the risk of human and economic losses resulting from preventable accidents;
- comply with all safety and health laws, regulations, and Project Safety Guidelines;
- efficiently and safely perform tasks;
- protect the environment from degradation; and
- satisfy the specific project goals and needs.

Important aspects in implementing the plan included:

- Kickoff Safety Meeting
- Collecting copies of 40-hour OSHA training certificates and current updates for all onsite personnel
- Confirming medical monitoring for all onsite personnel per 29 CFR 1910.120
- Respirator fit testing
- Daily tailgate safety meetings
- Personal air monitoring
- Personal decontamination station
- Exclusion zone demarcation

3.2 Materials Handling Plan

Spectrum prepared a Materials Handling Plan that provided specific information concerning concrete demolition and stockpiling; excavation of contaminated soil outliers in East Zones 1, 2, and 3; and placement of these materials within the AOC. A proposed construction schedule was also provided in the plan.

3.3 Daily Activities Logs

Sverdrup's Site Manager maintained a daily log that discussed daily production, equipment and manpower at the site, comments on progress of the work, and problems encountered. These logs are contained in Appendix II.

4.0 MOBILIZATION AND SITE PREPARATION

Sverdrup and Spectrum mobilized to the Site on November 6, 1995. Phase II mobilized earlier than required, while Phase I work was being performed, to allow the removal of clean soils located beneath the concrete foundation slab by the Phase I contractor.

Two temporary trailers were mobilized to the site and placed in the support area for use as an office and a personal decontamination station. The areas adjacent to the trailers were used for storage of equipment and materials, and for personnel vehicle parking. The "West Gate" was used for Site access and security control. The trailers were supplied with cellular phone service.

4.1 Exclusion Zone

All Phase II work within the areas of contamination and areas of consolidation were considered to be an Exclusion Zone for the purpose of limiting and controlling access and providing controls for Site personnel safety and health. The boundaries of the zone were appropriately identified with signage and caution flagging, as well as secured by limiting access points to one personnel decontamination area and one equipment decontamination area.

"Level-C" personal protective equipment (PPE) was utilized in the Exclusion Zone, until personal air quality monitoring indicated that downgrading was acceptable. Level-C personal protective equipment included, but was not limited to hard hat, steel-toed boots with boot covers or rubber-steel toed boots, gloves, disposable clothing (overalls), eye protection, and respiratory protection for inorganic particulate dust. Modified Level C eliminated the respiratory protection requirement.

4.2 *Decontamination Stations*

A personal decontamination station was setup at the entrance to the Exclusion Zone. The station consisted of a boot wash and rinse, followed by a change-out facility suitable for donning and doffing PPE. A self-contained wash unit was also located in the change-out facility. All personnel and hand tools exiting the Exclusion Zone were decontaminated at this station.

A heavy equipment decontamination area was setup by the Phase I contractor and was made available for use during Phase II. All equipment exiting the Exclusion Zone was decontaminated in this area before exiting the site. One exception was the water truck used for dust control during Phase II. Because of the need to routinely access an offsite fire hydrant, the water truck was allowed to have only its tires and other areas of observed potential contamination washed and/or dry brushed when exiting the Exclusion Zone.

4.3 Personal Air Monitoring

Personal air monitoring provided a baseline for the different tasks performed in Phase II, including

concrete demolition, excavating contaminated soils, and placing them within the AOC. Each of the various Phase II work tasks were started using Level C PPE (air purifying respirator), and each was downgraded to Modified Level D PPE (no respirator) after the baseline air sampling data indicated the tasks posed no significant health hazard. Personal air sampling data collected during Phase II are contained in Appendix III.

One exception occurred while excavating the North Outlier. After site personnel had downgraded to Modified Level D, analyses of a yellow and gray colored soil indicated elevated concentrations of lead (244,000 mg/kg) and arsenic (3,100 mg/kg). Excavation work stopped there until PPE were upgraded to Level C for the remaining excavation in this area.

4.4 Clearing and Grubbing

Clearing and grubbing and debris management took place through most of Phase II. Prior to excavating contaminated soil outliers and the west deep trench, vegetation was stripped and disposed offsite as solid waste. Assorted metal, plastic, and wood debris were collected and disposed offsite. The vegetation and debris were visually inspected for excessive accumulation of soil prior to removal from the Site.

4.5 Dust Control

Fugitive dust emissions were controlled during all Phase II site activities. Water was directly applied to concrete foundation slabs during crushing, as necessary. Haul roads and areas being excavated were routinely wetted to control dust. Perimeter and onsite air quality monitoring of the Phase II operations were regularly performed by the Engineer. The monitoring indicated that dust emissions remained below action levels during all Phase II activities.

5.0 CONCRETE DEMOLITION

5.1 Removal, Sizing, and Stockpiling of Concrete

Concrete demolition consisted of the excavation, rubblizing, and subsequent placement as fill of the existing ROBCO Building/Plant foundations, scale house, scale foundations, vaults, and other concrete structures found on Site. A total of 8,599 cubic yards of concrete was managed. The concrete was removed as large blocks to staging areas where crushing equipment processed the concrete to a size less than 12 inches in any dimension. The crushed and sized concrete was then accumulated into large stockpiles and measured for payment prior to transport and placement as fill within the AOC. Refer to Section 7.1 for details concerning the placement and compaction of the concrete fill.

During the concrete foundation removal and crushing activities, the control of the fugitive dust emissions was maintained using wetting methods. Fugitive dust and lead emissions did not exceed the limitations established by CDPHE, Air Pollution Control Division/or OSHA. Phase II provided monitoring of personnel breathing zone at a rate of no less than one sample per week (Appendix III).

5.2 Sewer Demolition

Demolition and closure in-place of the existing 46-inch sewer main required the demolition of the concrete clad brick liner system and the "blending" of site soils exceeding the site screening criteria with the brick/concrete sewer main rubble. Portions of the sewer main encountered during the excavation of soils meeting the site screening criteria were demolished during Phase I and the balance of the sewer main was demolished and closed in-place during Phase II in conjunction with the placement of soils exceeding the site screening criteria. During the utility trench excavation, a portion of the sewer above the spring line was exposed between W-3 and W-4. As instructed by the Site Engineer, soil was placed on both sides of the sewer sloping up to the structure. During Phase III operations, approximately 2 feet of soils meeting the site screening criteria will then be placed over the exposed portion of the sewer.

5.3 Offsite Waste Disposal

5.3.1 Drum Removal

A total of nine 55-gallon drums of undetermined content were identified at various locations on site during Phase I and II. During an initial site walkover, two drums were located along the west property boundary near the RTD property, three drums were located in a swale southeast of the North Zone, and two drums were located on the existing building foundations. Two additional drums and a small compressed gas cylinder were later unearthed during the Phase I and II excavation. Six of the drums had remaining contents and three were empty. Under the direction

of the Engineer and the Owner's Representative, and with concurrence by EPA and CDPHE, the Phase I Contractor collected and staged the nine drums in the site support area for the Phase II Contractor to manage and arrange offsite disposal.

The drums were over packed and moved to a staging area south of the office trailers by the Phase II Contractor. On February 21, 1996, the drums were removed from the site by Chemical Waste Management. The EPA signed the manifest for release of the drums to Chemical Waste Management (see appendices for copy of manifest). Chemical Waste Management, a subsidiary of Waste Management, Inc., characterized and analyzed the remaining contents of the drums in accordance with RCRA waste characterization criteria. The drums and their contents were then disposed at a facility licensed to handle the materials.

Phase II removed a small quantity of stained soils that resulted from leaking of the drums at the initial staging area on the site. The soils were placed into a five-gallon bucket, and stockpiled with hydrocarbon-affected soils which were managed by the Phase I/III contractor.

5.3.2 Personal Protective Equipment Disposal

Disposable PPE was managed and disposed as a non-hazardous solid waste as characterized by a point source evaluation done by Construction Quality Assurance Officer (CQAO) during Phase I. The Phase II PPE was sent to the BFI landfill at Tower Road in Commerce City, Colorado.

5.3.3 Metal Debris Removal

Metal rails and other metal debris were washed free of visible soil and then shipped offsite for recycling. During Phase II operations, 16 loads of such decontaminated metal debris were removed from the site by Denver East Machinery located at 15507 East 18th Street, Aurora, Colorado.

6.0 CONTAMINATED SOILS EXCAVATION

A total of 25,726 cubic yards of soils exceeding the site screening criteria were excavated and transported to the AOC for placement. In addition, a total of 7,930 cubic yards of this material was stockpiled prior to placement because they were either encountered during the Phase I excavation or contained frost which prevented placement at the time of excavation. A combined total of 33,306 cubic yards of soils were excavated and transported to the AOC.

Areas of contamination with soil exceeding the site screening criteria included:

- Locations below the ROBCO brick plant foundation, or between foundations if mixed with rubble;
- Areas extending north of the existing ROBCO Building foundation including the "East Zones 1, 2, and 3", "East Outlier", "North Zone" and "West Outliers", "North Zone Finger", "Island", "East 1 Zone Cut", "Northwest Cut", and "North Northwest Cut;"
- Utility corridors located west of the planned Home Depot facility.

The soils that exceeded the site screening criteria (SSC) were moved to the AOC and compacted to meet the compaction requirements as stated in the Construction Specifications.

6.1 Sampling and Verification of Area of Consolidation Closure

Soil samples within one foot of the design cuts were collected at a frequency of one sample per 1,000 square feet of excavated face. In addition, one sample per 250 cubic yards of excavated soil was analyzed for lead, and one sample per 1,000 cubic yards of excavated soil was analyzed for lead, arsenic, and zinc. Refer to the Phase II CQA Phased Remedial Response Action Closure Report for the results of verification sampling and analyses.

During the performance of Phase II Site Phased Remedial Response Action activities, the CQAO provided sampling and XRF analysis to verify that only soils exceeding the site screening criteria were excavated from the areas of contamination and placed into the AOC. The XRF analyses were sometimes supplemented by visual observations of excavated soils based on the extent of discolored soil or fill material. Some soils which exceeded the SSC had a distinct clayey texture or a grayish green or yellow coloring. Other soils had a distinctively darker color and were mixed with rubble. The type of visual discoloration of these soils varied from location to location. Based upon the correlation, some discolored soils or soils with rubble were excavated and managed as soil exceeding the site screening criteria in lieu of analytical testing. The frequency of soil sampling and the methods of analysis and characterization are detailed in the Phase II CQA Phased Remedial Response Action Closure Report.

6.2 *Hydrocarbon Affected Soils*

During excavation of the northeast corner of the ROBCO Building/Plant foundation(s), a small brick sump was discovered. The sump contained what appeared to be petroleum-contaminated soils. A sample was shipped offsite for laboratory analysis for total volatile petroleum hydrocarbon (TVPH) (EPA Method 530) and total extractable petroleum hydrocarbon (TEPH) (Colorado 8015 Modified Method). A CQA grab-type soil sample was also collected and analyzed onsite using XRF technology. The laboratory analysis indicated a TVPH at 6,200 to 6,800 mg/kg (Diesel Range and Motor Oil Range). An additional analysis of the TEPH indicated a Diesel Range of 7,300 mg/kg and a TEPH Motor Oil Range of 3,900 mg/kg. The onsite XRF analysis indicated that the soils met the site screening criteria for lead, arsenic, and zinc.

The petroleum-containing soils were then stockpiled to the north of the brick plant foundation, in an area where the Phase I contractor had placed similar petroleum-containing soils discovered during Phase I operations. The soils were allowed to aerate and then re-analyzed. This analysis indicated that the total petroleum hydrocarbon (TPH) concentrations were below the RAC III requirements (500 mg/kg). Therefore, at the end of Phase II, these soils were left stockpiled to be used by the Phase III contractor as clean fill material.

6.3 North Zone

Additional rubble and concrete structures were discovered during removal of soils exceeding the site screening criteria in the North Zone. During excavation, approximately eight pieces of nonfriable asbestos (transite) panels, approximately 6 inches by 4 inches, were found. The Site Engineer requested that the Phase II contractor excavate the asbestos tiles and place them in the AOC. At this same excavation, a black tar-like material was also observed within the soil and rubble. This material was analyzed and found to exceed the site screening criteria. The Site Engineer directed the Phase II contractor to excavate this material and place it in the AOC.

While removing the last known concrete structure and stockpiling the soil/rubble in the North Zone, a band of yellow clayey soil area was observed in the side walls of the excavation. The CQAO sampled the discolored soil. The results of the analysis indicated that the yellow soil contained over 244,000 mg/kg of lead and 3,100 mg/kg of arsenic. All personnel were immediately removed from the North Zone, and a plan was developed to safely remove the remaining soils in that area. The level of protection required within this work zone was upgraded to Level C, which required respiratory protection. Personal air monitoring was placed on the equipment operator working with the contaminated soils. To reduce dust and exposure, the contaminated soil and asbestos pieces were wetted prior to removal, and immediately placed, covered, and compacted within the AOC. The process of visual observation, soils excavation, and verification testing continued until 7,487 cubic yards of soil were removed from the North Zone.

Soil with concentrations above the site screening criteria were observed to extend beyond the

ROBCO site boundary and onto the Railroad property. At the property boundary, the yellow, clayey soil was analyzed and the lead concentration were on the order of 177,000 mg/kg of lead. EPA/CDPHE will notify the Railroad property owners of the discovery.

6.4 Groundwater Encountered

During Phase I/III construction of the Contingency Zone AOC, groundwater was encountered at an approximate elevation of 5219 feet. The water was visibly seeping into the excavation along the north and northwest portion of the Contingency Zone. In order for fill compaction to meet the project geotechnical requirements in this area, Phase II was instructed by the Engineer to overexcavate approximately 2 feet of the soil and replace the wet material with a mixture of concrete rubble, gravel , cobbles, and sandy soil. Approximately 80 cubic yards of processed concrete and brick were placed into the overexcavated area, followed by soil meeting the site screening criteria, to produce a bridge of compacted fill material over the wet, loose saturated soils capable of supporting the fill above.

6.5 Stockpiling of Frozen Soils

During late January and early February of 1996, freezing winter temperatures prohibited proper placement and compaction of fill material within the AOC. To allow excavation within the contaminated areas to continue, excavated material was stockpiled in the AOC for future placement and compaction during warmer temperatures. A total of 4,549 cubic yards of soil was stockpiled for this purpose. Table 2 presents the dates and quantities of stockpiled soils for frost management purposes.

TABLE 2

SOILS EXCEEDING THE SITE SCREENING CRITERIA STOCK-PILED IN THE AREA OF CONSOLIDATION FOR FROST MANAGEMENT

Date	Amount (cubic yards)	Stock-pile Location
January 1996	973	AOC
February 1996	1897	AOC W-2
February 1996	387	AOC
February 1996	587	AOC W-4S
February 1996	705	AOC W-2
TOTAL	**4549**	

7.0 PLACEMENT OF CONCRETE/SOILS WITHIN AREA OF CONSOLIDATION

Rubblized concrete and soils exceeding the site screening criteria were placed within the AOC and compacted to meet the required density and moisture content requirements as specified in the ROBCO Site Remedial Response Action Construction Specifications.

7.1 Concrete Placement

After the concrete foundations were crushed and stockpiled for measurement for payment, the rubblized material was moved by truck to the AOC where it was mixed with soil and compacted. Inside the utility trenches (areas that may be active after remedial action), the concrete was placed in one-foot thick lifts to a maximum elevation of 5225. The demolition and sizing of concrete and other site debris conformed with project requirements with respect to location and compaction.

Additional concrete was discovered during the final week of Phase II operations and was managed and placed as fill using different methods, since the crushing equipment had been demobilized from the site. In order to place the concrete without rubblizing and yet meet project geotechnical fill requirements, the additional concrete was placed in the deepest portions of the AOC that remained accessible. The concrete pieces were placed no less than 20 feet apart to reduce the potential of bridging and future settlement.

7.2 Modification of the AOC and Addition of the Contingency Zone

As a result of encountering more concrete and soil exceeding site screening criteria than anticipated within the Phase II design cuts, the design of the AOC was modified to increase its capacity. The contaminated soil excavations continued, an additional area "Contingency Zone" was required to allow for the additional amount of soil which exceeded the site screening criteria. Therefore, in late February, the Phase I/III contractor re-mobilized to the site to constructed the Contingency Zone.

Tables 3 and 4 present the volume of concrete and soil excavated from the specific areas of the Site and placed in the AOC, respectively. Table 5 present the volume of soils stockpiled from Phase I activities for Phase II placement and compaction. The ROBCO Site Remedial Response Action Drawing Numbers R-6, R-6a, and R-11 provide a topographic and isometric presentation of the as-built site conditions at the end of Phase II closure activities. These drawings are contained within the Phase II CQA Phased Remedial Response Action Closure Report.

TABLE 3

CONCRETE, DEBRIS, AND RUBBLE PLACED IN THE CONSOLIDATION AREA FROM BUILDING FOUNDATION(S)

Date	Volume (cubic yards)
November 1995	3361
December 1995	1078
December 1995	2905
January 1996	208
January 1996	389
January 1996	73
January 1996	486
January 1996	69
February 1996	30
TOTAL	**8599**

TABLE 4

EXCAVATED SOIL EXCEEDING THE SITE SCREENING CRITERIA AND PLACED IN CONSOLIDATION AREA

Date	Volume (cubic yards)	Origination Area
November 1995	None	
December 1995	4260	North Zone
December 1995	225	West Outlier
December 1995	110	East Outlier
December 1995	195	Island
January 1996	2130	North Zone
January 1996	4290	East 1 Zone
January 1996	2360	East 2 Zone
January 1996	1857	East 3 Zone
February 1996	1097	North Zone
February 1996	153	North Zone Finger
February 1996	113	North Northwest Cut
February 1996	265	Northwest Cut
February 1996	4300	East 1 Zone
February 1996	857	East 1 Zone Cut
February 1996	131	East Zone Cut
February 1996	3383	East 1 and 3 Zone
TOTAL	**25726**	

TABLE 5

STOCKPILED SOIL EXCEEDING THE SITE SCREENING CRITERIA AND PLACED IN CONSOLIDATION AREA

Date	Volume (cubic yards)	Stockpile Location
December 1995	598	Consolidation Area W-2
December 1995	1628	Consolidation Area W-4
January 1996	56	Consolidation Area W-4S
January 1996	69	Consolidation Area W-2
January 1996	73	North Zone
January 1996	90	East 1 Zone
January 1996	96	East 1 Zone
January 1996	131	East 1 Zone
February 1996	140	East 1 Zone
February 1996	1756	Consolidation Area W-2
February 1996	2933	Consolidation Area W-2
February 1996	360	AOC W-2 Cut
TOTAL	**7930**	

7.3 Excavation of Utility Trenches and Perimeter Slopes

For constructability reasons, the utility corridors and toes of the AOC and the Contingency Zone were built by first placing soil that exceeded the site screening criteria to the edges of design AOC, compacting the material to the required density, and then excavating back to the required depth and slope. The volume of soil that was removed to construct the utilities trenches and AOC perimeter slopes during Phase II was 15,625 cubic yards. Table 6 lists the date and specific areas of these excavations.

TABLE 6

SOIL EXCEEDING THE SITE SCREENING CRITERIA EXCAVATED FROM THE UTILITY CORRIDORS AND PERIMETER SLOPES OF THE AOC

Date	Volume (cubic yards)	Excavated Location
January 1996	2517	Main North/South Utility Corridor
February 1996	3285	AOC W-2 East Toe
February 1996	328	AOC W-2 Southeast Toe
February 1996	5292	Utility Corridors
February 1996	2280	AOC W-3 and W-4 Toe
February 1996	96	AOC W-4S Southwest Toe
March 1996	458	AOC Contingency Zone Toe
March 1996	992	AOC W-3 Northeast Toe
TOTAL	**15248**	

Sampling and verification of soils removed from Area of Consolidation perimeter slopes were performed during Phase II to ensure that only those soils that exceed the site screening criteria were relocated. Verification samples were collected approximately every 100 feet around the exterior perimeter of the Area of Consolidation. The samples were completed in accordance with the *ROBCO Site Remedial Response Action Construction Specifications and Construction Quality Assurance Plan*. If the soil analysis indicated that the soil exceeded the SSC, additional soils surrounding the sample location (based on visual observation) were removed and placed in the AOC and another verification sample was collected and analyzed. This procedure was repeated until the walls outside the AOC were verified as containing only soils meeting the site screening criteria. The analytical results collected by Phase II are located in Appendix V of this report.

7.4 Field Design Changes

Because of the increased volume of concrete and soils exceeding SSC, several design changes were necessary for AOC during Phase II. These changes were previously described in this report. Additional field design changes are summarized below:

- Phase II was directed by the CQAO to not excavate to the design grade in the northeast portion of the East Zone 2. CQAO directed Phase II to make shallower cuts in certain areas of East Zone 2 because of the presence of clean sands and gravels.

- At the Site Engineer's direction, wooden railroad ties discovered during the Phase II excavation were placed in deep fill areas, at a spacing no closer that 20 feet apart to reduce the potential for bridging and future settlement.

- At the request of the Site Engineer, an additional 0.4 feet of soil exceeding the site screening criteria was placed on W-2 to allow for additional capacity in the AOC.

- Several of the perimeter slopes within the AOC were field designed to allow for additional fill capacity. The southern, eastern, west, and northwest perimeter slopes were cut at 1:1 on the outside slopes and the inside wall was cut almost vertical.

- Phase II was instructed by the Site Engineer to remove fill material already placed within the AOC from the western boundary of the East Zone 1 and East Zone 3 in order to allow the Phase III Contractor access to additional soils meeting the site screening criteria. These natural alluvial deposits were located below approximately 4 feet of soil exceeding the site screening criteria along the east side of the AOC perimeter slope. The excavated soil was removed by the Phase II contractor, stockpiled away from the crest line of the AOC, and replaced after the soil that met the site screening criteria was removed by the Phase III Contractor.

7.5 Geotechnical Sampling and Testing

Geotechnical sampling and testing were performed by Rocky Mountain Consulting (RMC) on the soils placed, and compacted during Phase II. To characterize the various soil types encountered during Phase II operations, standard proctor compaction tests (ASTM D-698), particle size analyses (ASTM D-422), soil classifications using USCS (ASTM D-2487), and Atterberg Limits (ASTM D-4318) were completed on seven (7) samples. The soil test results were included with the weekly site activity reports (Appendix VI).

Nuclear density tests (ASTM D-2922) and sand cone test (ASTM D-1556) were conducted on the fill material placed within the AOC at the frequency specified in the *ROBCO Site Remedial Response Action Construction Specifications*. If the nuclear gauge indicated that the placement of the soils did not meet 95% of the standard proctor maximum dry density as required by the

Specifications, the area was reworked and then retested until it passed.

The final geotechnical report for Phase II is presented as Appendix VI of this report.

7.6 Construction Surveying

Construction surveying was performed by Rocky Mountain Consulting (RMC) during Phase II construction. Phase II surveying was used as survey control for excavation and fill placement. The surveyors used drawings provided by the Site Engineer to mark the locations of the AOC cut depths, and Consolidation Area crests, toes, and final grades. These areas were marked on the Site using wooden stakes, various colored flagging, spray paint, and permanent markers. Additional markings were required when the specification for excavation were field designed (i.e., Contingency Zone, perimeter slope modifications, etc). Upon completion of a specific area, additional surveying was performed in check final grades and slopes.

8.0 CHANGE ORDERS

During the Phase II work, Sverdrup approved seven (7) Change Orders (CO) to Subcontract No. 010865-S-59 for changing conditions and/or modifications to the design. In summary, the Change Orders were approved for the following issues:

- CO 001: Offsite characterization and disposal of eight (8) drums containing unknown materials.
- CO 002: Removal of deep foundations along the southwestern wall of the former brick plant.
- CO 003: Five (5) additional days of general conditions costs due to increased volumes of concrete requiring demolition.
- CO 004: Increased volume of required concrete demolition, and extended the Phase II completion date through February 4, 1996.
- CO 005: Additional handling (stockpiling) of frozen excavated soils prior to placement in the AOC, and the additional days of general conditions costs to extend the Phase II completion date through February 23, 1996.
- CO 006: Due to increased volume of contaminated soils encountered within the areas of contamination, additional days of general conditions costs to extend the Phase II completion date through February 28, 1996.
- CO 007: Increased volume of contaminated soils managed, the increased volume of soils requiring relocation within the AOC to construct utility trenches and perimeter slopes, and the additional days of general conditions costs to extend the Phase II completion date through March 6, 1996.

Each Change Order was negotiated with and approved in whole or part by Sverdrup, EPA, and CDPHE. Each of the changes addressed in the Change Orders was incorporated into the previous discussions of Phase II tasks.

9.0 CERTIFICATION

The Phase II Work was performed following the guidance of the *ROBCO Site Remedial Response Closure Work Plan*, dated September 12, 1995; the *ROBCO Site Remedial Response Site-Specific Health and Safety Plan*, dated September 22, 1995; and the *ROBCO Site Remedial Response Action Construction Specifications and Drawings*, dated September 22, 1995, as prepared by ERM-Rocky Mountain, Inc.

To the best effort and knowledge of Sverdrup, the Phase II Work has been completed in accordance with these documents and applicable laws and regulations. By virtue of site inspections by the EPA and CDPHE, the CQAO, the Engineer, and the Owner's Representative and site surveys for payment and quality assurance by the CQAO, Sverdrup has received acceptance of the Phase II Work.

Sverdrup has prepared this Phase II Closure Report for incorporation into an all-encompassing report to be prepared by the CQAO that details the safe and effective placement, capping, identification, and closure of the heavy metal contaminated soils that exceed the site screening criteria. The CQAO will prepare this Phased Remedial Response Action Closure Report for the ROBCO Site to meet EPA certification requirements for closure of the Denver Radium Site OU-IX Record of Decision.

APPENDIX I
Weekly Summary Reports

November 13, 1995

Ms. Elizabeth Baracani
Sverdrup Environmental Inc.
1746 Cole Blvd., Suite 225
Golden, Colorado 80401

RE: **Weekly Progress Report #1: November 6 through November 11, 1995**
Robinson Brick Company (ROBCO) Site Phased Remedial Response Actions, Phase II.

Dear Ms. Baracani:

Spectrum Services, Inc. (Spectrum) is please to submit this weekly progress report for the above-mentioned work period in accordance with the requirements of the Technical Specifications. During the above period, Spectrum performed the following tasks:

General Conditions:

Spectrum and key subcontractors began and completed site mobilization activities for the concrete demolition activities under Phase II. This included staging of the site management trailer, decontamination trailer, the mobilization of a CAT 235 Backhoe with a mounted hydraulic crusher, a 1000 gallon water truck and two CAT 977 Bulldozers.

Site Safety Information:

Spectrum prepared and submitted the site health and safety plan. Training under the plan for all Spectrum personnel and on-site subcontractors was conducted as well as HazCom Site-Specific Training and any respirator fit tests needed by site personnel. Attendance records are available for review in the Phase II site management trailer.

The exclusion zone for the initial demolition of the concrete foundation was established with red "DANGER - DO NOT ENTER" tape. Only 1/3 of the foundation was taped off to prevent unprotected workers from entering the exclusion zone and allow the equipment to move freely about the immediate work area.

The personnel decontamination pad was upgraded to include a hand sprayer to provide a finish rinse. Additional modifications will be made next week, as necessary, to enhance the effectiveness of the decontamination process.

Discussions were held with Mr. Larry Bruskin of the Colorado Department of Public Health and Environment, Mr. Dennis Boll of Sverdrup Environmental, and you about down grading from Level C to a modified Level C, if possible. At your request, Spectrum is preparing cost impact

information relating to the additional health & safety monitoring required to make this change.

Evergreen Environmental conducted air monitoring to verify that appropriate level of protection has been chosen for worker protection. The results will be available on November 14.

Documentation Submittals:

Along with the Site Health and Safety Plan, the Material Handling Plan and the Project Schedule are being prepared for submittal on November 13, 1995.

Site Construction Activities:

Spectrum began demolition activities on the large concrete foundation, working from the south east corner towards the northwest corner. The processed concrete is being stock piled on the north end of the pad and the steel debris is being stock piled on the southeast corner (see attached map). By November 10, 1995, about 10% of the pad had been processed.

During the initial demolition, it was discovered that the foundation is actually 4 separate layers that consist of 3 concrete layers with a mixture of soil and sand between the concrete. This condition was report to Sverdrup verbally and by a field memo.

Action Items:

Spectrum has been requested to prepare information concerning the down grading from Level C to a lower level of protection. Also, Spectrum is considering working on Saturday and Sunday, November 18 & 19, 1995, because of the construction of the foundation may be slowing demolition rates due to the increase in volume of material to be handled.

Please contact me at the site management trailer at 981-1146 if you need any additional information or any comments or questions about this report.

Sincerely,
Spectrum Services, Inc.

Harry E. Moseley
ROBCO Phase II Project Manager

cc: Dennis Boll, Sverdrup

Larry Bruskin, CDPHE
Dan Hinds, ERM-Rocky Mountain, Inc.- Engineer
Mike Keller, ERM-Rocky Mountain, Inc. CQAO

November 20, 1995

Ms. Elizabeth Baracani
Sverdrup Environmental Inc.
1746 Cole Blvd., Suite 225
Golden, Colorado 80401

RE: **Weekly Progress Report #2: November 12 through November 18, 1995**
Robinson Brick Company (ROBCO) Site Phased Remedial Response Actions, Phase II.

Dear Ms. Baracani:

Spectrum Services, Inc. (Spectrum) is pleased to submit this weekly progress report for the above-mentioned work period in accordance with the requirements of the Technical Specifications. During the above period, Spectrum performed the following tasks:

General Conditions:

Spectrum mobilized two additional pieces of equipment (CAT 235 Backhoe with a mounted hydraulic hammer and CAT 235 Backhoe with a mounted hydraulic gripper) to assist with the demolition activities.

Site Safety Information:

Spectrum prepared and submitted the site health and safety plan and is awaiting approval.

As the demolition activities expand, the exclusion zone will be moved to protect the workers as well as not impede the Phase I contractor's activities. At present, about 1/3 of the foundation has been taped off to prevent unprotected workers from entering the exclusion zone and allow the equipment to move freely about the immediate work area.

The personnel decontamination pad has been moved closer to the "dress-out" trailer. Additional modifications will be made as necessary, to enhance the effectiveness of the decontamination process.

Spectrum is seeking additional information and guidance on down grading from Level C to a modified Level D. We are looking at worker productivity as well as cost impact information relating to the additional health & safety monitoring required to make this change.

Spectrum submitted the results of the personal air monitoring to verify that appropriate level of protection has been chosen for worker protection.

Documentation Submittal:

The Material Handling Plan and the Project Schedule were submitted for review and approval on November 13, 1995. Spectrum will submit an updated schedules as the work progresses.

Site Construction Activities:

Demolition activity on the large concrete foundation continues as we work from the southeast corner toward the northwest corner to free up excavation areas for the Phase I contractor. The processed concrete is being stock piled on the north end of the pad and the steel debris is being stock piled on the southeast corner. By November 18, 1995, about 25% of the pad had been processed.

The foundation continues to be made up of a number of different layers with a mixture of soil and sand between the concrete.

The concrete processor broke down on Friday, November 16 and was out of commission until the morning of November 20, 1995.

Action Items:

Spectrum will be working until 7pm on Monday, November 20, 1995 and until 10pm on Tuesday, November 21, 1995. Additionally, Spectrum is working on Friday, Saturday and Sunday, November 24, 25 & 26, 1995, because of the construction of the foundation may be slowing demolition rates due to the increase in volume of material to be handled and the concrete processing equipment being down on November 18 th and 19th.

Please contact me at the site management trailer at 981-1146 if you need any additional information or any comments or questions about this report.

Sincerely,
Spectrum Services, Inc.

Harry E. Moseley
ROBCO Phase II Project Manager

cc: Dennis Boll, Sverdrup
Larry Bruskin, CDPHE
Dan Hinds, ERM-Rocky Mountain, Inc.- Engineer
Mike Keller, ERM-Rocky Mountain, Inc. CQAO

file copy

November 27, 1995

Ms. Elizabeth Baracani
Sverdrup Environmental Inc.
1746 Cole Blvd., Suite 225
Golden, Colorado 80401

RE: **Weekly Progress Report #3: November 19 through November 25, 1995**
Robinson Brick Company (ROBCO) Site Phased Remedial Response Actions, Phase II.

Dear Ms. Baracani:

Spectrum Services, Inc. (Spectrum) is pleased to submit this weekly progress report for the above-mentioned work period in accordance with the requirements of the Technical Specifications. During the above period, Spectrum performed the following tasks:

General Conditions:

No new equipment was mobilized during this time period, however, the concrete processor, which broke down on November 16th, was repaired and remobilized on-site on November 20th. Spectrum worked into the evening on Monday, November 20th and on Tuesday, November 21st to make up for last weekend's lost production.

Site Safety Information:

Spectrum down graded to a modified Level C after reviewing additional information and receiving guidance on down grading from Level C to a modified Level C as described in the Health and Safety Plan. An opinion letter was prepared and submitted to Sverdrup on November 22. The crews were informed of the change. Personal air monitioring will be conducted on a one day per week basis to monitor any changes in conditions and to verify that the modified Level C remains an appropriate level of PPE.

Documentation Submittal:

The Material Handling Plan and the Project Schedule were submitted for review and approval on November 13, 1995. Spectrum will submit an updated schedules as the work progresses.

Site Construction Activities:

Demolition activity on the large concrete foundation continues as we work from the southeast corner toward the northwest corner to free up excavation areas for the Phase I contractor. Spectrum has requested a"survey for payment" be conducted on Tuesday, November 29th. A new stock pile has been started on the northwestern corner of the pad to receive the remainder of the foundation demolition debris.

The foundation continues to be made up of a number of different layers with a mixture of soil, sand, brick and asphalt between the concrete. During the demolition activities on the center cells of the foundation, it was discovered that the center wall is made 4 feet of solid concrete and brick. This area will be jackhammered then crushed because of the thickness and construction. Also, Spectrum discovered a small brick vault under the center of the south concrete pad. The vault was removed.

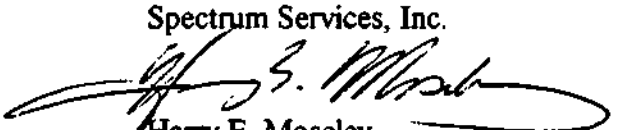
Spectrum shipped offsite 5 loads of decontaminated metal rails and other metal debris. By November 25, 1995, approximately 45% of the pad had been processed.

Action Items:

Spectrum may be working Saturday and Sunday, December 2 & 3, 1995, because of the construction of the foundation may be slowing demolition rates due to the increase in volume of material to be handled and to clear the east zone for the Phase I contractor. Additionally, Spectrum will complete the removal of the driveway concrete by Tuesday, November 28, 1995, so the area will be available for the Phase I contractor. This activity is one day behind schedule.

Please contact me at the site management trailer at 981-1146 if you need any additional information or any comments or questions about this report.

Sincerely,
Spectrum Services, Inc.



Harry E. Moseley
ROBCO Phase II Project Manager

cc: Dennis Boll, Sverdrup
Larry Bruskin, CDPHE
Dan Hinds, ERM-Rocky Mountain, Inc.- Engineer
Mike Keller, ERM-Rocky Mountain, Inc. CQAO

December 7, 1995

Ms. Elizabeth Baracani
Sverdrup Corporation
1746 Cole Blvd., Suite 225
Golden, Colorado 80401

RE: **Weekly Progress Report #4: November 26 through December 2, 1995**
Robinson Brick Company (ROBCO) Site Phased Remedial Response Actions, Phase II.

Dear Ms. Baracani:

Spectrum Services, Inc. (Spectrum) is pleased to submit this weekly progress report for the above-mentioned work period in accordance with the requirements of the Technical Specifications. During the above period, Spectrum performed the following tasks:

General Conditions:

No new equipment was mobilized during this time period, however, the concrete processor, which broke down on November 26 th, was repaired and operational on November 27th.

Site Safety Information:

Spectrum performed personal air monitoring to monitor any changes in conditions and to verify that the modified Level C remains an appropriate level of PPE. The results are attached and posted in our trailer.

Documentation Submittal:

Comments were received about our The Material Handling Plan, Site Health and the Project Schedule. Spectrum will review and response to the comments.

Site Construction Activities:

Demolition activity on the large concrete foundation continues as we work from the southeast corner toward the northwest corner. Spectrum has completed the demolition of the concrete over East 1 Zone to free up excavation areas for the Phase I Contractor by working December 2nd and 3rd. Spectrum requested a"survey for payment" be conducted on Thursday, November 30th, which was conducted on the initial stockpile and a small stockpile on the northwest pad area. The results will be available on Monday, December 4, 1995.

A new stock pile was started on the northwestern corner of the pad to receive the remainder of the foundation demolition debris. Since this material had some wood in it that could not be easily segregated, Spectrum was directed by the Site Engineer to place this material in the bottom of the

West Trench before any other material.

Spectrum discovered a small brick sump in the northeast corner that contained petroleum contaminated soils. The vault was removed and the soil will be tested and managed.

Spectrum shipped offsite an additional 2 loads of decontaminated metal rails and other metal debris. By December 3, 1995 approximately 75% has been demolished and 57% of the pad had been processed.

Action Items:

Spectrum may be working Saturday and Sunday, December 9 & 10, 1995, because of the construction of the foundation may be slowing demolition rates due to the increase in volume of material to be handled.

Please contact me at the site management trailer at 981-1146 if you need any additional information or any comments or questions about this report.

Sincerely,
Spectrum Services, Inc.

Harry E. Moseley
ROBCO Phase II Project Manager

cc: Dennis Boll, Sverdrup
Larry Bruskin, CDPHE
Dan Hinds, ERM-Rocky Mountain, Inc.- Engineer
Mike Keller, ERM-Rocky Mountain, Inc. CQAO

December 10, 1995

Ms. Elizabeth Baracani
Sverdrup Corporation
1746 Cole Blvd., Suite 225
Golden, Colorado 80401

RE: **Weekly Progress Report #5: December 3 through December 9, 1995**
Robinson Brick Company (ROBCO) Site Phased Remedial Response Actions, Phase II.

Dear Ms. Baracani:

Spectrum Services, Inc. (Spectrum) is pleased to submit this weekly progress report for the above-mentioned work period in accordance with the requirements of the Technical Specifications. During the above period, Spectrum performed the following tasks:

General Conditions:

To increase production and maintain the schedule, another concrete processor was mobilized on Monday, December 4th, however, the old concrete processor broke down on December 7th and the unit is unrepairable. This attachment will be removed from the CAT 235 and replaced with a 3-yard bucket that will be used for the loading of processed concrete so it can be placed in the western deep trench. Spectrum worked Saturday, December 9th and Sunday, December 10, 1995 to maintain the schedule.

The CAT 225 with the mounted hydraulic hammer was decontaminated and sent off site.

Spectrum met with its geo-technical and surveying subcontractor, Rocky Mountain Consultants, Inc. (RMC) to discuss the possible schedule and their duties. RMC will survey the west deep trench on Tuesday, December 12, 1995, to mark the appropriate elevations for the backfilling of the demolition debris.

Additionally, RMC is proposing to perform all geo-technical analysis on-site using approved ASTM methods. Spectrum will prepare an addendum to our Material Handling Plan to reflect this change.

Site Safety Information:

Spectrum performed personal air monitoring to monitor any changes in conditions and to verify that the modified Level C remains an appropriate level of PPE. The results are attached and posted in our trailer.

Documentation Submittal:

Comments were received about our The Material Handling Plan, Site Health and the Project Schedule. Spectrum reviewed the comments and is preparing our response.

Site Construction Activities:

Spectrum decontaminated the CAT 225 with the mounted hydraulic hammer and used it around the site to break up large pieces of concrete. This material will be relocated to the stockpile for processing.

Demolition activity on the large concrete foundation continues as we work on the final two locations. Spectrum completed the demolition of the foundation in every area except where the stockpiles are located. Also, Spectrum completed processing the large rubble pile located next to the new stock pile. Spectrum requested a"survey for payment" be conducted on Tuesday, December 12th on the new stockpile.

During the start of the demolition activities in the northern wall of the foundation, it was discovered that the concrete vault structure under concrete and fill material, which extends approximately 17 feet below the surface of the ground and approximately 20 feet by 30 feet. The structure was hidden from view under several layers of concrete, bricks, soil and other debris. Additionally, the concrete has a minimum thickness of 18 inches and in areas is 24 inches thick. Photographs of this condition have been taken and will be available for your review.

After a partial excavation was performed, the uncovered structure was removed by using the CAT 225 with the mounted hydraulic hammer to break the vault enough for the CAT 325 backhoe to remove it from the excavation. This activity has caused a one day delay to the demolition schedule.

To complete the demolition of the foundation, the area adjacent to the vault must be excavated to the bottom of the concrete footers and around the sides of the vault. Part of the vault exists under a portion of our new stockpile located on the northwest pad. This demolition will be done after the concrete pad has been cleared.

Spectrum shipped offsite an additional 2 loads of decontaminated metal rails and other metal debris. By December 9, 1995 all of the available foundation area has been demolished with the exception of the concrete under each stockpile and 75% of the pad had been processed.

Action Items:

Spectrum may be working Saturday and Sunday, December 16 & 17, 1995, to continue the relocating of the processed concrete and continue demolition of outlying structures and the sewer closure.

Please contact me at the site management trailer at 981-1146 if you need any additional information or any comments or questions about this report.

Sincerely,
Spectrum Services, Inc.

Harry E. Moseley
ROBCO Phase II Project Manager

cc: Dennis Boll, Sverdrup
Larry Bruskin, CDPHE
Dan Hinds, ERM-Rocky Mountain, Inc.- Engineer
Mike Keller, ERM-Rocky Mountain, Inc. CQAO

December 17, 1995

Ms. Elizabeth Baracani
Sverdrup Corporation
1746 Cole Blvd., Suite 225
Golden, Colorado 80401

RE: **Weekly Progress Report #6: December 10 through December 16, 1995**
Robinson Brick Company (ROBCO) Site Phased Remedial Response Actions, Phase II.

Dear Ms. Baracani:

Spectrum Services, Inc. (Spectrum) is pleased to submit this weekly progress report for the above-mentioned work period in accordance with the requirements of the Technical Specifications. During the above period, Spectrum performed the following tasks:

General Conditions:

To prepare for the placement of concrete debris, Spectrum mobilized two 10 yard enddump trucks, a 20-yard Terek offroad dump truck and a 27-yard Terek offroad dump truck. By the end of the week, the two 10 yard enddumps were demobilized on Friday, December 15, 1995. The CAT 235 excavator was modified with a 3-yard bucket that will be used for the loading of processed concrete so it can be placed in the western deep trench. Spectrum worked Saturday, December 16th and Sunday, December 17, 1995 to maintain the schedule.

Per Spectrum's updated schedule, Spectrum was going to begin the excavation and placement of soils. However, this was delayed until next week because of the additional excavation activities performed by the Phase 1 contractor in W1 and the new western consolidation area.

Spectrum met with its geo-technical and surveying subcontractor, Rocky Mountain Consultants, Inc. (RMC) to discuss the possible schedule and their duties. RMC surveyed the west deep trench on Tuesday, December 12, 1995, to mark the appropriate elevations for the backfilling of the demolition debris. All the geotechnical and survey reports are attached.

Site Safety Information:

Spectrum performed personal air monitoring to monitor any changes in conditions and to verify that the modified Level C remains an appropriate level of PPE. The results are attached and posted in our trailer.

Documentation Submittal:

Comments were received about our The Material Handling Plan, Site Health and the Project Schedule. Spectrum reviewed the comments and is preparing our response.

Site Construction Activities:

Spectrum completed demolition activities on the scale house and other structures on site. Large pieces of concrete continue to be found around the site. They were relocated to the stockpile area by Phase 1

Contractor and Spectrum to be processed. The Western Trench Area was cleared and grubbed to prepared for concrete placement. Spectrum completed the demolition of the foundation in every area except where the stockpiles are located. Also, Spectrum completed processing the large rubble pile located next to the new stock pile. Spectrum requested a "survey for payment" be conducted on Wednesday, December 13th on the new stockpile. As of Wednesday, December 13th, Spectrum has demolished and processed 5,904 cubic yards of concrete.

During the start of the demolition activities in the northern wall of the foundation, it was discovered that the concrete vault structure under concrete and fill material, which extends approximately 17 feet below the surface of the ground and approximately 20 feet by 30 feet. The structure was hidden from view under several layers of concrete, bricks, soil and other debris. Additionally, the concrete has a minimum thickness of 18 inches and in areas is 24 inches thick. Photographs of this condition have been taken and will be available for your review.

After a partial excavation was performed, the uncovered structure was removed by using the CAT 225 with the mounted hydraulic hammer to break the vault enough for the CAT 325 backhoe to remove it from the excavation. This activity has caused a one day delay to the demolition schedule.

To complete the demolition of the foundation, the area adjacent to the vault must be excavated to the bottom of the concrete footers and around the sides of the vault. Part of the vault exists under a portion of our new stockpile located on the northwest pad. This demolition will be done after the concrete pad has been cleared.

Spectrum shipped offsite an additional two loads of decontaminated metal rails and other metal debris. By December 16, 1995, all of the available foundation area has been demolished with the exception of the concrete under each stockpile, processed, placed and compacted.

Action Items:

Spectrum submitted its schedule for the Christmas Holiday period. Spectrum will not be working on-site from Saturday, December 23, 1995 through Tuesday, December 26, 1995. Spectrum has not determined its schedule during the New Year Holiday period.

Please contact me at the site management trailer at 981-1146 if you need any additional information or any comments or questions about this report.

Sincerely,
Spectrum Services, Inc.

Harry E. Moseley
ROBCO Phase II Project Manager

cc: Dennis Boll, Sverdrup
Larry Bruskin, CDPHE
Dan Hinds, ERM-Rocky Mountain, Inc.- Engineer
Mike Keller, ERM-Rocky Mountain, Inc. CQAO

December 27, 1995

Ms. Elizabeth Baracani
Sverdrup Corporation
1746 Cole Blvd., Suite 225
Golden, Colorado 80401

RE: **Weekly Progress Report #7: December 17 through December 23, 1995**
Robinson Brick Company (ROBCO) Site Phased Remedial Response Actions, Phase II.

Dear Ms. Baracani:

Spectrum Services, Inc. (Spectrum) is pleased to submit this weekly progress report for the above-mentioned work period in accordance with the requirements of the Technical Specifications. During the above period, Spectrum performed the following tasks:

General Conditions:

Spectrum mobilized two Terek offroad trucks (20 yd & 25 yd) to replaced the 27-yard Terek offroad dump truck and 15-yard enddump truck. A CAT D-8 bulldozer was brought in to replace the other bulldozer. Attached are copies of the daily geo-technical and survey reports.

Site Safety Information:

Spectrum performed personal air monitoring to monitor any changes in conditions and to verify that the modified Level C remains an appropriate level of PPE. The results are attached and posted in our trailer.

Site Construction Activities:

Large pieces of concrete continue to be found around the site. They are being relocated to the stockpile area by Phase 1 Contractor and Spectrum to be processed. There are two large stockpiles of concrete that require processing.

Spectrum started soil excavation in the North Zone and soil placement on top of the concrete debris in the Western Trench area. Soils will be placed in this area until the top of the utility trench is reached. At that time the utility trenches will be cut out.

Spectrum completed the in-place demolition of the sewer without any problems. The area was inspected by the Spectrum project manager and the CQAO to verify that the demolition was completed as directed by the Site Engineer.

Spectrum completed the removal of deep foundations on the northern boundary of the foundation. To complete the demolition of the foundation, the area adjacent to the vault was excavated to the bottom of the concrete footers and around the sides of the vault. After a partial excavation was performed, the uncovered structure was removed by using the CAT 225 with the mounted hydraulic hammer to break the vault enough for the CAT 325 backhoe to remove it from the excavation. This activity has caused two day delay to the demolition schedule.

Spectrum shipped offsite an additional two loads of decontaminated metal rails and other metal debris.

Action Items:

Spectrum did not work on-site from Saturday, December 23, 1995 through Tuesday, December 26, 1995. We will not be working during the New Year holiday weekend and will return to the site on Tuesday, January 2, 1996.

Please contact me at the site management trailer at 981-1146 if you need any additional information or any comments or questions about this report.

Sincerely,
Spectrum Services, Inc.

Harry E. Moseley
ROBCO Phase II Project Manager

cc: Dennis Boll, Sverdrup
Larry Bruskin, CDPHE
Dan Hinds, ERM-Rocky Mountain, Inc.- Engineer
Mike Keller, ERM-Rocky Mountain, Inc. CQAO

Dennis

January 2, 1995

Ms. Elizabeth Baracani
Sverdrup Corporation
1746 Cole Blvd., Suite 225
Golden, Colorado 80401

RE: **Weekly Progress Report #8: December 24 through December 30, 1995**
Robinson Brick Company (ROBCO) Site Phased Remedial Response Actions, Phase II.

Dear Ms. Baracani:

Spectrum Services, Inc. (Spectrum) is pleased to submit this weekly progress report for the above-mentioned work period in accordance with the requirements of the Technical Specifications. During the above period, Spectrum performed the following tasks:

General Conditions:

No new equipment was mobilized during this period. Spectrum returned to the site on December 27, 1995. Spectrum re-surveyed and placed "cut" stakes for East Zone 2 and West Zone after receiving the new "Bottom of Lead" map. Spectrum has yet to receive a current topographical map of the site after Phase 1 activities. Spectrum removed the stained soils from near the drums.

Site Safety Information:

Spectrum performed personal air monitoring to monitor any changes in conditions and to verify that the modified Level C remains an appropriate level of PPE. A detectable amount of zinc was found during air sampling but was significantly below the PEL. The results are attached and posted in our trailer.

Site Construction Activities:

Large pieces of concrete continue to be found around the site. They were relocated to the stockpile area and processed. A survey for payment was requested for the piles on the northwest corner of the old foundation area. The other stockpile will be ready for survey at the end of the first week of January.

Also, a large number of railroad ties have been found in the North Zone, East Zone 1 and East Zone 2. Disposal of these will be researched and performed.

Spectrum completed soil excavation in the North Zone, West Outlier, East Outlier, the Island and Finger areas based on the information that we had. Also, soil from these areas was placed and compacted on top of the concrete debris in the Western Trench area. Soils will be placed in this area until the top of the utility trench is reached. At that time the utility trenches will be cut out.

Spectrum began excavating in East Zone 2 but will return to the other areas if additional material must be removed and/or CQAO requests Spectrum to remove and process the concrete foundation and walls found in the North Zone.

Spectrum shipped offsite one load of decontaminated metal rails and other metal debris.

Action Items:

We will not be working during the New Year holiday weekend and will return to the site on Tuesday, January 2, 1996. At that time, Spectrum will continue to excavate in East Zone 2, place soils and process concrete.

Please contact me at the site management trailer at 981-1146 if you need any additional information or any comments or questions about this report.

Sincerely,
Spectrum Services, Inc.

Harry E. Moseley
ROBCO Phase II Project Manager

cc: Dennis Boll, Sverdrup
Larry Bruskin, CDPHE
Dan Hinds, ERM-Rocky Mountain, Inc.- Engineer
Mike Keller, ERM-Rocky Mountain, Inc. CQAO

January 8, 1996

Ms. Elizabeth Baracani
Sverdrup Corporation
1746 Cole Blvd., Suite 225
Golden, Colorado 80401

RE: **Weekly Progress Report #9: December 31, 1995 through January 6, 1996**
Robinson Brick Company (ROBCO) Site Phased Remedial Response Actions, Phase II.

Dear Ms. Baracani:

Spectrum Services, Inc. (Spectrum) is pleased to submit this weekly progress report for the above-mentioned work period in accordance with the requirements of the Technical Specifications. During the above period, Spectrum performed the following tasks:

General Conditions:

No other new equipment was mobilized on-site during this reporting period. Spectrum continues to perform the proper geo-technical testing and surveying as necessary. Surveying included the utility trenches, offsets for East Zone 2, and excavation depths in the West zone. The depths of excavation had to be modified because of the new information received on January 3, 1996. Attached are copies of the daily geo-technical reports.

Due to weather, Spectrum did not perform any site activities on Friday, January 5, 1996 through Sunday, January 7, 1996.

Spectrum requested information pertaining to the soil contamination levels in East Zone 1 after the remove of the basement areas as well as the deep foundation areas. This may have an impact on the amount of material required to be excavated.

Spectrum received a copy of the new "Bottom of Lead" information map. Also, Spectrum received information pertaining to the "finger" area, West Outlier, East Outlier and Island. Spectrum was requested to return to the "finger", North Zone and West Outlier to remove additional material.

A "survey for payment" has been requested for several stockpiles of concrete, soil piles and excavated areas. Spectrum is awaiting this information from CQAO, so we can prepare our invoice.

Per the Engineer's direction, all wood ties should be processed and placed in the deep fill areas.

Site Safety Information:

Spectrum performed personal air monitoring to monitor any changes in conditions and to verify that the modified Level C remains an appropriate level of PPE. The results are attached and posted in our trailer.

Site Construction Activities:

Large pieces of concrete continue to be found in East 2 as well as other areas around the site. There are one

large stockpile and one small stockpile of concrete that require processing.

Spectrum continues soil excavation activities in East Zone 2 and West Zone as well as soil placement on top of the concrete debris in the Western Trench area. Soils will be placed in this area until the top of the utility trench is reached. At that time the utility trenches will be cut out.

Spectrum completed the in-place demolition of the sewer without any problems. The area was inspected by the Spectrum project manager and the CQAO to verify that the demolition was completed as directed by the Site Engineer

Spectrum began on the construction of the utility trenches in areas where we are at grade in the Western trench.

Action Items:

Spectrum did not work on-site from Saturday, January 6, 1996 or Sunday, January 7, 1996 because of the weather. We will plan to work January 13, 1996 to maintain the schedule. However, Spectrum is preparing a request for a schedule extension based on the amount of materials and the unknown conditions.

Please contact me at the site management trailer at 981-1146 if you need any additional information or any comments or questions about this report.

Sincerely,
Spectrum Services, Inc.

Harry E. Moseley
ROBCO Phase II Project Manager

cc: Dennis Boll, Sverdrup
Larry Bruskin, CDPHE
Dan Hinds, ERM-Rocky Mountain, Inc.- Engineer
Mike Keller, ERM-Rocky Mountain, Inc. CQAO

January 15, 1996

Ms. Elizabeth Baracani
Sverdrup Corporation
1746 Cole Blvd., Suite 225
Golden, Colorado 80401

RE: **Weekly Progress Report # 10: January 7, 1996 through January 14, 1996**
Robinson Brick Company (ROBCO) Site Phased Remedial Response Actions, Phase II.

Dear Ms. Baracani:

Spectrum Services, Inc. (Spectrum) is pleased to submit this weekly progress report for the above-mentioned work period in accordance with the requirements of the Technical Specifications. During the above period, Spectrum performed the following tasks:

General Conditions:

No other new equipment was mobilized on-site during this reporting period. Spectrum continues to perform the proper geo-technical testing and surveying as necessary. Surveying included the Area of Consolidation, the utility trenches, and Western Freecut zone.. Attached are copies of the daily geo-technical reports.

Due to weather, Spectrum did not perform any site activities on Sunday, January 7, 1996.

Spectrum requested information pertaining to the soil contamination levels in East Zone 1 after the remove of the basement areas as well as the deep foundation areas. This may have an impact on the amount of material required to be excavated.

Spectrum received from CQAO a new excavation map for North Zone and direction on how the additional soil and the concrete in the area should be managed. Also, Spectrum received direction from the CQAO on the soil stockpiles in East Zone 1 and excavating in the northeast corner of East Zone 2.

A "survey for payment" has been requested for several stockpiles of concrete, soil piles and excavated areas. While Spectrum received part of the information, the maps were incorrect and incomplete. We still await the complete information for "backup" on our submitted invoice.

Also, there was a dispute about a soil pile created by the Phase 1 contractor and placed and compacted by Spectrum. During a "Resolution Meeting" on January 9, 1996, Spectrum was directed to excavate a test pit in the area of the old stockpile to see if it was worked and compacted. The area did meet compaction and the dispute was resolved.

Spectrum submitted a request for a schedule extension because of the additional material and unknown conditions, which was approved.

Site Safety Information:

Spectrum performed personal air monitoring to monitor any changes in conditions and to verify that the modified Level C remains an appropriate level of PPE. The results are attached and posted in our trailer.

Site Construction Activities:

Spectrum completed soil placement on top of the concrete debris in the Western Trench area and began cutting out the utility trenches.

In East Zone 1, Spectrum removed a stockpile of soil and placed it in W 1. Some limited excavation was done in areas with cut stakes were present.

Spectrum returned to the North Zone to remove the residual soils that exceeded the site screening criteria. A large deposit of brick and concrete was found on the north end of the North Zone. This material, as well as the buried concrete stab and structures, will be managed after the conformation sampling is completed and demonstrated that the area is clean.

Spectrum was directed by the CQAO to not excavated to the model grade in the northeast portion of East Zone 2. CQAO directed Spectrum to made a shallow cut in certain areas of East Zone 2 because of the presents of clean sands and gravels.

Action Items:

Spectrum will complete the excavation activities in the North Zone and remove the rubble and concrete starting on Monday, January 15, 1996. Then, Spectrum will excavate East Zone 3, East Zone , and the utility trenches.

The weekly meeting was moved from 1 PM to 9 AM and a Phase II / Phase III scheduling meeting was schedule for Monday, January 15, 1996 at 1 PM.

Please contact me at the site management trailer at 981-1146 if you need any additional information or any comments or questions about this report.

Sincerely,
Spectrum Services, Inc.

Harry E. Moseley
ROBCO Phase II Project Manager

cc: Dennis Boll, Sverdrup
Larry Bruskin, CDPHE
Dan Hinds, ERM-Rocky Mountain, Inc.- Engineer
Mike Keller, ERM-Rocky Mountain, Inc. CQAO

January 22, 1996

Ms. Elizabeth Baracani
Sverdrup Corporation
1746 Cole Blvd., Suite 225
Golden, Colorado 80401

RE: **Weekly Progress Report # 11: January 15, 1996 through January 20, 1996**
Robinson Brick Company (ROBCO) Site Phased Remedial Response Actions, Phase II.

Dear Ms. Baracani:

Spectrum Services, Inc. (Spectrum) is pleased to submit this weekly progress report for the above-mentioned work period in accordance with the requirements of the Technical Specifications. During the above period, Spectrum performed the following tasks:

General Conditions:

No other new equipment was mobilized on-site during this reporting period. Spectrum continues to perform the proper geo-technical testing and surveying as necessary. Surveying included the Area of Consolidation, the utility trenches, offsets for East Zone 1 & 3 and Western Freecut Zone toe points. Attached are copies of the daily geo-technical reports.

Due to weather (snow and below freezing temperatures), Spectrum could not excavate or place soil from 1 PM on Wednesday, January 17, 1996 until 10:30 AM on Friday, January 19, 1996.

Spectrum received information pertaining to the soil contamination levels in East Zone 1 after the remove of the basement areas as well as the deep foundation areas. This will have an impact on the amount of material required to be excavated.

Spectrum received from CQAO a new excavation map for North Zone, East Zone 2 and direction on how the additional soil and the concrete in the area should be managed. Also, Spectrum received direction from the CQAO on the soil stockpiles in East Zone 1 and excavating in the northeast corner of East Zone 2.

A "survey for payment" has been requested for several stockpiles of concrete, soil piles and excavated areas. While Spectrum received part of the information, the maps were incorrect and incomplete. We still await the complete information for "backup" on our submitted invoice.

Site Safety Information:

Spectrum performed personal air monitoring to monitor any changes in conditions and to verify that the modified Level C remains an appropriate level of PPE. The results are attached and posted in our trailer.

Site Construction Activities:

Spectrum began removing the last known area of contamination in the North Zone. After completing this excavation, Spectrum was directed to remove the concrete structures found buried with soil and rubble. A small amount of asbestos roof tile (non-friable) was found along with some tar contaminated soil. The Site

Engineer requested that Spectrum remove and stockpile the clean soils over the rubble and concrete for the Phase III Contractor to manage. Also, Spectrum was directed to excavate the small amount of asbestos tile (8 6" X 4" pieces) and tar contaminated soil and place the material in the Area of Consolidation.

In removing the last concrete structure and stockpiling the soil and rubble, a yellow soil area was discovered. Spectrum's project manager stopped excavating in this area and the CQAO took a sample to be analyzed. While awaiting the results, the rest of the rubble was removed and stockpiled. CQAO reported that the soil contain over **244,000** ppm of lead and **3100** ppm arsenic. Spectrum removed all personnel from the area and developed a plan to remove the soils in the area. The Engineer directed Spectrum to excavate the highly contaminated soils as well as relocating the stockpile of rubble and soil that was on top of the highly contaminated soils.

All personnel was directed to be in Level C with air montioring on the excavator operator(who was the closest to the contamination), the soil was to be wetted, to reduce any dust, placed, covered and compacted immediately upon arrival to the West Freecut Area. This activity took place until the CQAO directed Spectrum to stop excavation based on visual indications that the yellow soil had been removed. Testing and visual inspection show that additional material still needs to be removed.

In East Zone 1, Spectrum conducted some limited excavation was done in areas with cut stakes were present.

In East Zone 2, Spectrum was directed by the CQAO to complete its excavation to the model grade with the exception of in the northeast portion of East Zone 2. CQAO tested the area after we completed our cuts and indicated that additional contamination had to be removed.

Based on visual observations, CQAO directed Spectrum to made a shallow cut in certain areas of East Zone 3 because of the presents of clean sands and gravels.

Action Items:

Spectrum will continue the excavation activities in East Zone 3 and then East Zone 1 before completing East Zone 2 and the North Zone.

Please contact me at the site management trailer at 981-1146 if you need any additional information or any comments or questions about this report.

Sincerely,
Spectrum Services, Inc.

Harry E. Moseley
ROBCO Phase II Project Manager

cc: Dennis Boll, Sverdrup
Larry Bruskin, CDPHE

Dan Hinds, ERM-Rocky Mountain, Inc.- Engineer
Mike Keller, ERM-Rocky Mountain, Inc. CQAO

January 27, 1996

Ms. Elizabeth Baracani
Sverdrup Corporation
1746 Cole Blvd., Suite 225
Golden, Colorado 80401

RE: **Weekly Progress Report # 12: January 21, 1996 through January 27, 1996**
Robinson Brick Company (ROBCO) Site Phased Remedial Response Actions, Phase II.

Dear Ms. Baracani:

Spectrum Services, Inc. (Spectrum) is pleased to submit this weekly progress report for the above-mentioned work period in accordance with the requirements of the Technical Specifications. During the above period, Spectrum performed the following tasks:

General Conditions:

No other new equipment was mobilized on-site during this reporting period. Spectrum continues to perform the proper geo-technical testing and surveying as necessary. Surveying included the Area of Consolidation, the utility trenches, and Western Freecut zone.

Due to weather, Spectrum was advised by CQAO to stop conducting any soil placement activities during the afternoon of Monday, January 22, 1996 until Wednesday, January 24, 1996 and again on Thursday, January 25, 1996 and Friday, January 26, 1996. No weekend work was attempted because of the weather conditions.

Spectrum requested information pertaining to the soil contamination levels in East Zone 1 after the remove of the basement areas as well as the deep foundation areas. This may have an impact on the amount of material required to be excavated.

Spectrum received from CQAO a new excavation map for the "finger" area. Also, Spectrum received direction from the CQAO on the soil stockpiles in East Zone 1 and excavating in the northeast corner of East Zone 2.

Spectrum submitted a request for a schedule extension because of the weather delays, additional material and unknown conditions, which was approved.

Site Safety Information:

Spectrum performed personal air monitoring to monitor any changes in conditions and to verify that the modified Level C remains an appropriate level of PPE. The results are attached and posted in our trailer.

Site Construction Activities:

Spectrum continued soil placement in the Far Western Trench area and began cutting out the utility trenches before it was stopped due to severe weather.

Action Items:

Spectrum will attempt to conduct site activities on Monday, January 29, 1995 weather permitting.

Please contact me at the site management trailer at 981-1146 if you need any additional information or any comments or questions about this report.

Sincerely,
Spectrum Services, Inc.

Harry E. Moseley
ROBCO Phase II Project Manager

cc: Dennis Boll, Sverdrup
Larry Bruskin, CDPHE
Dan Hinds, ERM-Rocky Mountain, Inc.- Engineer
Mike Keller, ERM-Rocky Mountain, Inc. CQAO

February 5, 1996

Ms. Elizabeth Baracani
Sverdrup Corporation
1746 Cole Blvd., Suite 225
Golden, Colorado 80401

RE: **Weekly Progress Report # 13: January 28, 1996 through February 3, 1996**
Robinson Brick Company (ROBCO) Site Phased Remedial Response Actions, Phase II.

Dear Ms. Baracani:

Spectrum Services, Inc. (Spectrum) is pleased to submit this weekly progress report for the above-mentioned work period in accordance with the requirements of the Technical Specifications. During the above period, Spectrum performed the following tasks:

General Conditions:

No other new equipment was mobilized on-site during this reporting period. Spectrum continues to perform the specified geotechnical testing and surveying as necessary. Surveying included the Area of Consolidation, the utility trenches, and Western Freecut zone.

Due to weather, Spectrum was unable to conduct any soil excavation and placement during the afternoon of Monday, January 29, 1996 and Tuesday, January 30, 1996 and again on Friday, February 2, 1996. No weekend work was attempted because of the weather conditions.

Spectrum received a memo from the Site Engineer displaying design modification to the north end of the utility trench on Friday, February 2, 1996.

A meeting was held to discuss possible site activities that Spectrum could perform during the severe weather that took place during this week. After discussions with you, CQAO, the Site Engineer, Larry Bruskin of the Colorado Department of Public Health and Environment and CTC-Geotech, Spectrum, at the request of Sverdrup, is proposing the following activities to be conducted during this weather impacted time period.

Spectrum will excavate the remaining areas of East Zone 1, East Zone 3, the "finger area", the North Zone and East Zone 2, along with the haul roads and other areas that are required to be excavated. This material will be stockpiled in the Area of Consolidation (AOC) for future placement and compaction. This allows Spectrum to continue working during this time, allows the CQAO to sample and confirm that areas are cleaned and puts us closer to completion.

If it is necessary to stockpile soils from the construction of the Area of Consolidation and utility trenches, the same procedure would be used.

Spectrum submitted a request for a schedule extension because of the weather delays, additional material and unknown conditions, which was approved.

Site Safety Information:

Spectrum performed personal air monitoring to monitor any changes in conditions and to verify that the modified Level C remains an appropriate level of PPE. The results are attached and posted in our trailer.

Site Construction Activities:

Spectrum excavated and stockpiled soil (approximately 3500 cubic yards) in the AOC for placement during better weather. Spectrum requested an " end of month" survey for all excavation and stockpiles.

Action Items:

Spectrum will attempt to conduct site activities on Monday, February 5, 1996 weather permitting.

Please contact me at the site management trailer at 981-1146 if you need any additional information or any comments or questions about this report.

Sincerely,
Spectrum Services, Inc.

Harry E. Moseley
ROBCO Phase II Project Manager

cc: Dennis Boll, Sverdrup
Larry Bruskin, CDPHE
Dan Hinds, ERM-Rocky Mountain, Inc.- Engineer
Mike Keller, ERM-Rocky Mountain, Inc. CQAO

ROBCO PHASE II SCHEDULE

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
4	5 Rip Frost Excavate EZ1 Excavate Finger Excavate EZ1 hill Area Stockpile soil no placement	6 Rip Frost Excavate EZ1 hill Area Clean EZ3 / EZ2 Excavate Finger	7 Rip Frost Excavate EZ1 hill area Excavate North Zone, Rip Frost Excavate Utility Trenches & AOC Toes, Excavate "hot spots"	8 Rip Frost Excavate Utility Trenches & Toes Excavate "hot spots"	9 Rip Frost Excavate Utility Trenches & Toes Excavate "hot spots"	10
11	12 Rip Frost Excavate Utility Trenches & Toes Excavate "hot spots"	13 Rip Frost Excavate Utility Trenches & Toes Excavate "hot spots"	14 Rip Frost Excavate Utility Trenches & Toes Excavate "hot spots"	15 Rip Frost Excavate Utility Trenches & Toes Excavate "hot spots"	16 Rip Frost Excavate Utility Trenches & Toes Excavate "hot spots"	17
18	19 Rip Frost Excavate Utility Trenches & Toes Excavate "hot spots" Decon	20 Rip Frost Excavate Utility Trenches & Toes Excavate "hot spots" Decon	21 Decon	22 Decon	23 Decon	24

February 13, 1996

Ms. Elizabeth Baracani
Sverdrup Corporation
1746 Cole Blvd., Suite 225
Golden, Colorado 80401

RE: **Weekly Progress Report # 14: February 4, 1996 through February 10, 1996**
Robinson Brick Company (ROBCO) Site Phased Remedial Response Actions, Phase II.

Dear Ms. Baracani:

Spectrum Services, Inc. (Spectrum) is pleased to submit this weekly progress report for the above-mentioned work period in accordance with the requirements of the Technical Specifications. During the above period, Spectrum performed the following tasks:

General Conditions:

No other new equipment was mobilized on-site during this reporting period. Spectrum continues to perform the specified geotechnical testing and surveying as necessary. Surveying included the Area of Consolidation, the utility trenches, and Western Freecut zone.

Spectrum conducted soil excavation and placement during this work period including Saturday, February 10, 1996 and surveying on Sunday, February 11, 1996.

Spectrum received the requested "survey for payment" information and requested a "survey for payment" for the stockpiles created during the severe weather event and the clean soil that was removed from the eastern toe of the AOC.

Site Safety Information:

Spectrum performed personal air monitoring to monitor any changes in conditions and to verify that the modified Level C remains an appropriate level of PPE with the exception of the North Zone. While conducting excavation activities in the North Zone, Spectrum personnel were in Level C. The results are attached and posted in our trailer.

Site Construction Activities:

Spectrum excavated and placed soils that were stockpiled (approximately 3500 cubic yards) in the AOC for placement during better weather. Additional excavation was performed in the West Zone to bring the Area of Consolidation close to final grade, the North Zone and the "Finger Area".

Spectrum also remove some clean material from the eastern boundary of the AOC. This material was stockpiled near the clean soil stockpile created by the Phase 1 Contractor.

Action Items:

Spectrum will excavate the remaining East Zone 1 and East Zone 3 Areas, haul roads, the utility trenches and continue to work towards the completion date of February 23, 1996. Additional material was identified to be removed on the northern boundary of East Zone 1.

Please contact me at the site management trailer at 981-1146 if you need any additional information or any comments or questions about this report.

Sincerely,
Spectrum Services, Inc.

Harry E. Moseley
ROBCO Phase II Project Manager

cc: Dennis Boll, Sverdrup
Larry Bruskin, CDPHE
Dan Hinds, ERM-Rocky Mountain, Inc.- Engineer
Mike Keller, ERM-Rocky Mountain, Inc. CQAO

DATE	TRUCK TYPE	CONTAMINATED SOILS	Sub-Total Cubic Yards	FROST	Sub-Total Cubic Yards	PROCESSED CONCRETE	Sub-Total Cubic Yards	RELOCATED SOILS	Sub-Total Cubic Yards
02-Feb-96	TEREX LOADS	0	0.00	0	0.00	0	0.00	0	0.00
	TANDEM LOADS	0	0.00	0	0.00	0	0.00	0	0.00
05-Feb-96	TEREX LOADS	88	1320.00	0	0.00	0	0.00	0	0.00
	TANDEM LOADS	16	160.00	0	0.00	0	0.00	0	0.00
06-Feb-96	TEREX LOADS	83	1245.00	0	0.00	0	0.00	0	0.00
	TANDEM LOADS	20	200.00	0	0.00	0	0.00	18	180.00
07-Feb-96	TEREX LOADS	66	990.00	0	0.00	0	0.00	0	0.00
	TANDEM LOADS	16	160.00	0	0.00	0	0.00	0	0.00
08-Feb-96	TEREX LOADS	59	885.00	0	1500.00		0.00		0.00
	TANDEM LOADS	25	250.00	0	0.00		0.00		0.00
	TEREX LOADS		0.00		0.00		0.00		0.00
	TANDEM LOADS		0.00		0.00		0.00		0.00
	TOTALS---		5210.00		1500.00		0.00		180.00

Total Number of Cubic Yards Handled 6890.00

February 20, 1996

Ms. Elizabeth Baracani
Sverdrup Corporation
1746 Cole Blvd., Suite 225
Golden, Colorado 80401

RE: **Weekly Progress Report # 15: February 11, 1996 through February 17, 1996**
Robinson Brick Company (ROBCO) Site Phased Remedial Response Actions, Phase II.

Dear Ms. Baracani:

Spectrum Services, Inc. (Spectrum) is pleased to submit this weekly progress report for the above-mentioned work period in accordance with the requirements of the Technical Specifications. During the above period, Spectrum performed the following tasks:

General Conditions:

Spectrum mobilized additional track excavator (CAT 325) on Saturday, February 17, 1996 to assist with the remaining work on site. The Cat 225 excavator shovel was removed and the hydraulic hammer was attached to process some of the concrete that had been uncover during excavation activities in the northern boundary of East Zone 1 and other areas. The water truck's oil pan was puncture causing engine failure. The truck was replaced.

Spectrum continues to perform the specified geotechnical testing and surveying as necessary. Surveying included the Area of Consolidation, the newly designed Contingency Area, and the utility trenches.

Spectrum conducted soil excavation and placement during this work period including Saturday, February 17, 1996 and Sunday, February 18, 1996.

A set of draft drawing detailing the new contingency zone and southern boundary of the AOC was received on February 12, 1996.

Site Safety Information:

Spectrum performed personal air monitoring to monitor any changes in conditions and to verify that the modified Level C remains an appropriate level of PPE. The results are attached and posted in our trailer.

Site Construction Activities:

Spectrum completed placement soils that were stockpiled in the AOC for placement during better

weather. Additional excavation was performed in the West Zone to bring the Area of Consolidation close to final grade, the East Zone 1 and the utility trenches.

Spectrum was instructed by the Site Engineer to remove some material from the western boundary of East Zone 1 and East Zone 3 which was on or near the clean toe of AOC by the end of Sunday, February 18, 1996 (attached). These activities would allow the Phase III Contractor access to the clean sands and gravel in and outside the AOC along the toe cut areas. The soil was stockpiled away from the crest line of the AOC and will have to be replaced once the clean soil is removed by the Phase III Contractor.

Spectrum cut back the northern end of the utility trench to allow the construction of the Contingency Zone by the Phase I contractor. Some of the placed material was outside the latest AOC boundary, which had to be removed and some was inside the boundary, which was required by the new design, to be removed. All of it was removed to a specific point so that construction of the Contingency Zone could be completed.

Spectrum completed construction of the western "toe" of the AOC. A field design change to allow a more vertical utility trench cut and would still provide the new sewer with at least a two foot barrier of clean soil. This increased the capacity of the AOC and allowed the Phase III Contractor to begin backfilling sooner.

Action Items:

Spectrum will excavate the remaining East Zone 1 and East Zone 3 Areas that were not excavated because they were being use as a haul road by both contractors. The utility trenches, AOC "toes", constructed bridges and "hot" areas identified by the CQAO will be excavated and soil will be placed in the appropriate areas.

The waste drums are scheduled to be picked up by Chemical Waste Management on February 21, 1996 to be transported to the disposal site.

Please contact me at the site management trailer at 981-1146 if you need any additional information or any comments or questions about this report.

Sincerely,
Spectrum Services, Inc.

Harry E. Moseley
ROBCO Phase II Project Manager

cc: Dennis Boll, Sverdrup

Larry Bruskin, CDPHE
Dan Hinds, ERM-Rocky Mountain, Inc.- Engineer

DATE	TRUCK TYPE	CONTAMINATED SOILS	Sub-Total Cubic Yards	FROST	Sub-Total Cubic Yards	PROCESSED CONCRETE	Sub-Total Cubic Yards	RELOCATED SOILS	Sub-Total Cubic Yards
09-Feb-96	TEREX LOADS	30	450.00	0	0.00	0	0.00	106	1590.00
	TANDEM LOADS	0	0.00	0	0.00	0	0.00	0	0.00
10-Feb-96	TEREX LOADS	0	0.00	0	1800.00	0	0.00	57	855.00
	TANDEM LOADS	0	400.00	0	0.00	0	0.00	0	0.00
12-Feb-96	TEREX LOADS	69	1035.00	0	0.00	0	0.00	16	240.00
	TANDEM LOADS	0	0.00	0	0.00	0	0.00	0	0.00
13-Feb-96	TEREX LOADS	63	945.00	0	0.00	0	0.00	35	525.00
	TANDEM LOADS	11	110.00	0	0.00	0	0.00	0	0.00
14-Feb-96	TEREX LOADS	44	660.00	0	0.00	0	0.00	0	0.00
	TANDEM LOADS	0	0.00	0	0.00	0	0.00	0	0.00
15-Feb-96	TEREX LOADS	44	660.00	0	0.00	0	0.00	25	375.00
	TANDEM LOADS	0	0.00	0	0.00	0	0.00	0	0.00
	TOTALS---		4260.00		1800.00		0.00		3585.00

Total Number of Cubic Yards Handled 9645.00

ERM - Rocky Mountain, Inc.

RECORD OF COMMUNICATION	☐ Phone Call ☐ Discussion ☐ Conference ☐ Field Trip ☒ Other (Record of item checked above)	
TO: Harry Moseley, Specthum	FROM: Dan Hinds	DATE: 2/17/96
		TIME: 1500

SUBJECT: East 3 Zone Excavation - "SESSC"

SUMMARY OF COMMUNICATION

1) You are hereby directed on part of the East 1 Zone "punch-list" excavation for soils exceeding the site screening criteria, to excavate soils from East 3 Zone as shown on the attached drawing. These soils require removal to facilitate East Zone completion and access for Phase III AOC toe excavation on its east boundary. This task will require completion on 2/18/96, EOB delay.

2) Soils exceeding site screening criteria (SESSC) "push" into the East AOC toe excavation require removal to facilitate East side of AOC toe excavation by Phase III. This task must be completed by EOB 2/18/96

Note: The depth of excavation for item 1 is approximately 4 to 5 feet below existing grade. CQA to will provide in the field direction to establish its completion depth.

CONCLUSIONS, ACTION TAKEN OR REQUIRED:

2/17/96

INFORMATION COPIES TO:

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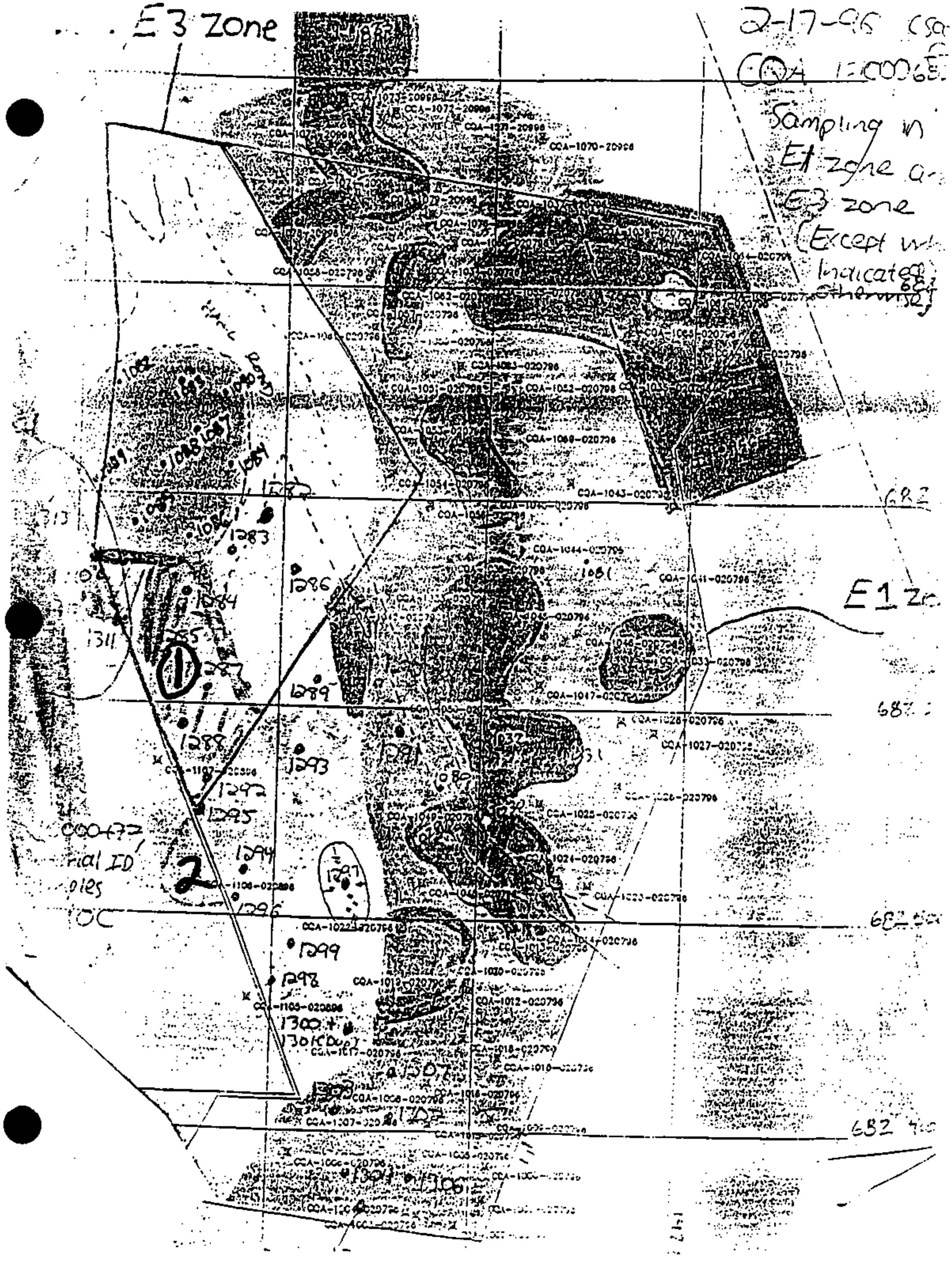

E3 Zone
2-17-96
Sampling in E1 zone and E3 zone (Except where indicated otherwise)
E1 Zone
COA-1070-20996
COA-1043-020796
COA-1044-020796
COA-1041-020796
COA-1017-020796
COA-1027-020796
COA-1025-020796
COA-1024-020796
COA-1023-020796
COA-1012-020796
1283
1286
1289
1288
1293
1295
1296
1299
1298
1300 +
1311
1313
1
2

February 26, 1996

Ms. Elizabeth Baracani
Sverdrup Corporation
1746 Cole Blvd., Suite 225
Golden, Colorado 80401

RE: **Weekly Progress Report # 16: February 18, 1996 through February 24, 1996**
Robinson Brick Company (ROBCO) Site Phased Remedial Response Actions, Phase II.

Dear Ms. Baracani:

Spectrum Services, Inc. (Spectrum) is pleased to submit this weekly progress report for the above-mentioned work period in accordance with the requirements of the Technical Specifications. During the above period, Spectrum performed the following tasks:

General Conditions:

No new equipment was mobilized during this reporting period.

Spectrum continues to perform the specified geotechnical testing and surveying as necessary. Surveying included the Area of Consolidation, the newly designed Contingency Area, and the utility trenches.

Spectrum conducted soil excavation and placement during this work period including Saturday, February 24, 1996 and Sunday, February 25, 1996.

Site Safety Information:

Spectrum performed personal air monitoring to monitor any changes in conditions and to verify that the modified Level C remains an appropriate level of PPE. The results have not been received and will be forwarded.

Site Construction Activities:

Spectrum continued to remove the material over the clean sands and gravels at the eastern boundary of the AOC. East Zone 1 and East Zone 3 "hot" spot excavations were completed. The haul roads were tested and the "hot" spots were removed.

The Site Engineer instructed Spectrum to place the material generated from the toe cut of each section to place on that section. These activities would increase the capacity of the AOC. Additional material above the design grade was placed in the Contingency Area.

The waste drums were picked up by Chemical Waste Management on February 21, 1996 and transported to the disposal site.

Spectrum started on construction of the eastern and southern "toes" of the AOC. A field design change to the southern toe was performed to allow for its current condition.

The top of Area of Consolidation W3 was accepted by the CQAO and released to the Phase III Contractor for backfilling activities.

Spectrum was instructed to remove clean material and place rubble in the northern extension of the utility trench where there is groundwater seeping in. About 80 cubic yards of processed concrete and brick was placed in the trench and then the clean soil was re-placed in the area.

Action Items:

Spectrum will excavate the rest utility trenches, grading Contingency Zone and AOC toes. The utility trenches, AOC "toes", constructed bridges and "hot" areas identified by the CQAO will be excavated and soil will be placed in the appropriate areas.

Please contact me at the site management trailer at 981-1146 if you need any additional information or any comments or questions about this report.

Sincerely,
Spectrum Services, Inc.

Harry E. Moseley
ROBCO Phase II Project Manager

cc: Dennis Boll, Sverdrup
Larry Bruskin, CDPHE
Dan Hinds, ERM-Rocky Mountain, Inc.- Engineer

PRODUCTION REPORT FOR ROBCO

DATE	TRUCK TYPE	CONTAMINATED SOILS	Sub-Total Cubic Yards	FROST	Sub-Total Cubic Yards	PROCESSED CONCRETE	Sub-Total Cubic Yards	RELOCATED SOILS	Sub-Total Cubic Yards
16-Feb-96	TEREX LOADS	0	0.00	0	0.00	0	0.00	0	0.00
	TANDEM LOADS	0	0.00	0	0.00	0	0.00	0	0.00
17-Feb-96	TEREX LOADS	0	0.00	0	0.00	0	0.00	142	2130.00
	TANDEM LOADS	0	0.00	0	0.00	0	80.00	0	0.00
18-Feb-96	TEREX LOADS	57	855.00	0	0.00	0	0.00	111	1665.00
	TANDEM LOADS	39	390.00	0	0.00	0	0.00	3	30.00
19-Feb-96	TEREX LOADS	142	2130.00	0	0.00	0	0.00	0	0.00
	TANDEM LOADS	15	150.00	0	0.00	0	0.00	0	0.00
20-Feb-96	TEREX LOADS	9	135.00	0	0.00	0	0.00	171	2565.00
	TANDEM LOADS	5	50.00	0	0.00	0	0.00	40	400.00
21-Feb-96	TEREX LOADS	0	0.00	0	0.00	0	0.00	56	840.00
	TANDEM LOADS	0	0.00	0	0.00	0	0.00	9	90.00
22-Feb-96	TEREX LOADS	0		0		0		46	
	TANDEM LOADS	0		0		0		7	
	TOTALS---		3710.00		0.00		80.00		7720.00

Total Number of Cubic Yards Handle 11510.00

THIS DOES NOT INCLUDE
THE STOCKPILE THAT
WAS PLACED WITH THE
LOADER FROM THE ROC
TEE AT THE NW CORNER
(2000CYS ?)

PRODUCTION REPORT FOR ROBCO

DATE	TRUCK TYPE	CONTAMINATED SOILS	Sub-Total Cubic Yards	FROST	Sub-Total Cubic Yards	PROCESSED CONCRETE	Sub-Total Cubic Yards	RELOCATED SOILS	Sub-Total Cubic Yards
16-Feb-96	TEREX LOADS	0	0.00	0	0.00	0	0.00	0	0.00
	TANDEM LOADS	0	0.00	0	0.00	0	0.00	0	0.00
17-Feb-96	TEREX LOADS	0	0.00	0	0.00	0	0.00	142	2130.00
	TANDEM LOADS	0	0.00	0	0.00	0	80.00	0	0.00
18-Feb-96	TEREX LOADS	57	855.00	0	0.00	0	0.00	111	1665.00
	TANDEM LOADS	39	390.00	0	0.00	0	0.00	3	30.00
19-Feb-96	TEREX LOADS	142	2130.00	0	0.00	0	0.00	0	0.00
	TANDEM LOADS	15	150.00	0	0.00	0	0.00	0	0.00
20-Feb-96	TEREX LOADS	9	135.00	0	0.00	0	0.00	171	2565.00
	TANDEM LOADS	5	50.00	0	0.00	0	0.00	40	400.00
21-Feb-96	TEREX LOADS	0	0.00	0	0.00	0	0.00	56	840.00
	TANDEM LOADS	0	0.00	0	0.00	0	0.00	9	90.00
22-Feb-96	TEREX LOADS	0		0		0		46	
	TANDEM LOADS	0		0		0		7	
	TOTALS---		3710.00		0.00		80.00		7720.00

Total Number of Cubic Yards Handle 11510.00

THIS DOES NOT INCLUDE
THE STOCKPILE THAT
WAS PLACED WITH THE
LOADER FROM THE ROC
[illegible] AT THE NW CORNER
(2000 CYS ?)

CWC

03:10 PM 02/23/96

March 4, 1996

Ms. Elizabeth Baracani
Sverdrup Corporation
1746 Cole Blvd., Suite 225
Golden, Colorado 80401

RE: **Weekly Progress Report # 17: February 25, 1996 through March 2, 1996**
Robinson Brick Company (ROBCO) Site Phased Remedial Response Actions, Phase II.

Dear Ms: Baracani:

Spectrum Services, Inc. (Spectrum) is pleased to submit this weekly progress report for the above-mentioned work period in accordance with the requirements of the Technical Specifications. During the above period, Spectrum performed the following tasks:

General Conditions:

No new equipment was mobilized during this reporting period.

Spectrum continues to perform the specified geotechnical testing and surveying as necessary. Surveying included the Area of Consolidation, the newly designed Contingency Area, and the utility trenches.

Spectrum conducted soil excavation and placement during this work period including Saturday, March 2, 1996 and Sunday, March 3, 1996.

Site Safety Information:

Spectrum performed personal air monitoring to monitor any changes in conditions and to verify that the modified Level C remains an appropriate level of PPE. The results are attached.

Site Construction Activities:

Spectrum completed all excavation activities in all areas outside the AOC.

The Site Engineer instructed Spectrum to move its subcontractor 's trailer in order for Phase III to have access to their soil stock pile. The trailer is scheduled to be move on Sunday, March 3, 1996.

The entire Area of Consolidation was inspected and accepted by the Site Engineer and released to the Phase III Contractor for backfilling activities.

Action Items:

Spectrum will be excavating of the toes and grading of the Contingency Zone and W1. Also, we will be decontaminating our equipment as well as taking care of any punch list items generated by Site Engineer.

Spectrum requested "survey for payment" information on February 27, 1996.

Please contact me at the site management trailer at 981-1146 if you need any additional information or any comments or questions about this report.

Sincerely,
Spectrum Services, Inc.

Harry E. Moseley
ROBCO Phase II Project Manager

cc: Dennis Boll, Sverdrup
Larry Bruskin, CDPHE
Dan Hinds, ERM-Rocky Mountain, Inc.- Engineer

March 11, 1996

Ms. Elizabeth Baracani
Sverdrup Corporation
1746 Cole Blvd., Suite 225
Golden, Colorado 80401

RE: **Weekly Progress Report # 18: March 3, 1996 through March 11, 1996**
Robinson Brick Company (ROBCO) Site Phased Remedial Response Actions, Phase II.

Dear Ms. Baracani:

Spectrum Services, Inc. (Spectrum) is pleased to submit this weekly progress report for the above-mentioned work period in accordance with the requirements of the Technical Specifications. During the above period, Spectrum performed the following tasks:

General Conditions:

Spectrum has decontaminated all of the our equipment and will ship them off site during the next week.

Site Safety Information:

Spectrum did not performed personal air monitoring during this work period.

Site Construction Activities:

Spectrum completed all activities in all areas and they were inspected and accepted by the Site Engineer and released to the Phase III Contractor for backfilling activities.

Spectrum received the requested "survey for payment" information on March 9, 1996.

The last scrap metal bin was picked up.

Action Items:

Spectrum is preparing the project closure report.

Please contact me at my office at 303-292-1850 if you need any additional information or any comments or questions about this report.

Sincerely,
Spectrum Services, Inc.

Harry E. Moseley
ROBCO Phase II Project Manager

cc: Dennis Boll, Sverdrup
Larry Bruskin, CDPHE
Dan Hinds, ERM-Rocky Mountain, Inc.- Engineer

APPENDIX II
Daily Activities Logs

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Wednesday, November 8, 1995

WEATHER: Sunny, Warm (66°F)

CONTRACTORS ON SITE:

VISITORS: Larry Bruskin - CDPH&E

DAILY OPERATIONS: Met at site at 07:00. Site Specifc Health and Safety Meeting at 08:00 presented by Harry Mosely. Those attended were:
Curt Creager - HP Environmental
Dennis Ritz- HP Environmental
Matthew Roberts - Evergreen
Dennis Boll - Sverdrup Environmental
Elizabeth Baracani - Sverdrup Environmental
Kevin Gallaghere - HP Environmental
Dan Hinds - ERM-RockyMountain

The equipment that showed up on site consisted of the 235 excavator with a crusher and the water truck - 1000 gallons, and a front loader. The front loader had a torn fuel line, so it was not used. The 235 crusher started to remove and precrush the concrete pad. Water was sprayed unto the operation to reduce the dust exposure. The concrete consisted of approximately 3-4 inches of top dressing, 4 inches of concrete, 4-6 inches of sand & soil, and 3-4 inches of concrete. The concrete thickness was originally assumed to be 12 inches thick. The soil between the layer of concrete was tested by the SCQA to verify that the soil was clean. A Field Memorandum which discussed the concrete findings was issued to Sverdrup by Spectrum. Sverdrup (Dennis Boll) responded to the Memo with a Memorandum For Record which is located in the field files.

Approximately 50 by 90 ft of the top layer of concrete had been removed and partially crushed by the end of the work day. The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 4:00 and work ended at approximately 4:30.

Dennis and I met with the SCQA (Ray Miskines and Mike Keller) for approximately 1 hour discussing the SCQA operations and possible contaminated areas.

The results of the soil samples between the layers of concrete indicated that the levels of Zn, Cd, and Pb were below the soil screening criteria levels

ACTION ITEMS:

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Thursday, November 9, 1995

WEATHER: Sunny, Warm, (Wind picked up at approximately 09:30)

CONTRACTORS ON SITE: HP Environmental Services

VISITORS: John Davidson - Williams Scotsman (HP Environmental's Trailer drop off)

DAILY OPERATIONS: Met at site at 07:00. Tailgate Safety Meeting at 07:00. Those attended were:
Curt Creager - HP Environmental
Dennis Ritz- HP Environmental

The 235 excavator with a crusher and the water truck - 1000 gallons continued to remove and precrush the concrete pad. The front loader moved the crushed debris from the main working area to a pile southeast of the operation and the concrete/soil was wetted as the work continued. end. Water was sprayed unto the operation to reduce the dust exposure. Harry Mosely was onsite during the morning work to observe dust control because the winds were gusting throughout the morning. It should be noted that Phase I contractors did not work today due to the "High Wind Warnings" that were in effect for the Denver area. According to Dan Hinds, the Phase I contractors are planning to work Saturday (Nov. 11) to make up for today.

The SCQA indicated that the workers in the exclusion zone were still wearing their tyvex when they filled the water trucks with water. He also indicated that the tires on the water truck needed to be no less than brushed off before leaving the exclusion zone. He also said that the exclusion zone should be set up today (no later than tomorrow morning) because the Phase I contractor was able to down grade to Level D and since we were going to stay in LevelC we would need to partion that area.

Approximately 50 by 90 ft of the top layer of concrete had been removed and partially crushed by the end of the work day. The front loader moved and piled the crushed material to the southeast end of the concrete pad. The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 4:00 and work ended at approximately 4:30.

ACTION ITEMS: Decon and removed protective clothing before leaving the exclusion zone. Decon the water truck tires by dry brushing or washing off on the decon pad prior to the trcuk leaving the exclusion zone. Set up the exclusion zone with the barricade tape.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Friday, November 10, 1995

WEATHER: Cloudy, Scattered Snow, Cold

CONTRACTORS ON SITE: HP Environmental

VISITORS: Larry Bruskin - CDPH&E

DAILY OPERATIONS: Subcontractors met at site at 07:00. Dennis Ritz- HP Environmental started using the 235 excavator and continued to crush the bulk material from yesterdays operation.

The persons on site today included: Curt Creager - HP Environmental
Dennis Ritz- HP Environmental
Elizabeth Baracani - Sverdrup Envionmental
Paul Casey - Spectrum Services
Harry Mosely - Spectrum Services

Set up the exclusion zone around a portion of the concrete pad which HP is planning to work and barricade tape and fence posts.

Dennis Ritz ran the 235 excavator with a crusher continued to remove and precrush the concrete pad. Due to the snow, there was no need for additional moisture, so the front loader moved the crushed debris from the main working area to a pile southeast of the operation on a continuous basis. It should be noted that Phase I contractors did not work today due to the scraper shut down and the snow.

Approximately 70 by 110 ft of the top layer of concrete had been removed and partially crushed by the end of the work day. The front loader moved and piled the crushed material to the southeast end of the concrete pad. The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 4:15 and work ended at approximately 4:30.

ACTION ITEMS:

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Monday, November 13, 1995

WEATHER: Foggy, Drizzling Rain, Cold

CONTRACTORS ON SITE: HP Environmental Services

VISITORS: Matt Roberts - Evergreen Environmental
Larry Bruskin - Colorado Department of Public Health and Environment

DAILY OPERATIONS: Subcontractors met at site at 07:00.

Tailgate Safety Meeting was held at 07:15.
Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Curt Creager - HP Environmental Services
Randy Miller - HP Environmental Services*
*Randy Miller was fit tested by Matt Roberts prior to entering the site. His 40 Hour OSHA and Refresher certificates were copied and filed.

Harry Moseley delivered the Material Handling Plan. I made some comments and changes were made to the Plan accordingly. The Plan was delivered to the SCQA with a transmittal sheet fromSverdrup.

The 235 excavator continued to break and crush the concrete. The bulldozer continued to move the crushed material to the temorary stockpile located in the northeast corner of the pad. An additional HP employee was added to work. He will be sifting through the temporary stockpiles for pieces of concrete which do not meet the 12 inch or less criteria and wetting down the material as needed.

Harry Moseley and I set up the Sverdrup sign outside the trailer. Four holes had to be drilled into the sign so it could be placed on the trailer.

The electrical contractor indicated that it would be approximately $4,000.00 to connect electric to HP Environmental Services trailer. The other option would be a generator. Curt Creager and Harry Moseley decided that a generator would be the best option.

The additional persons on site today include: Elizabeth Baracani - Sverdrup Envionmental
Paul Casey - Spectrum Services

Approximately 120 by 100 ft of the top layer of concrete had been removed and partially crushed by the end of the work day. The front loader moved and piled the crushed material to the southeast end of the concrete pad. The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 4:00 and work ended at approximately 4:30.

During the Phases Meeting today at 13:00, it was decided that since we seem to be finding more contaminated soil and concrete than anticipated, some of the concrete which is considered "clean" (above clean soils) should be stockpiled in an area where it can be left until the a better understanding of the capacity of the trenches can be determined. The concrete could potentially go off site if need be.

ACTION ITEMS:

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Tuesday, November 14, 1995

WEATHER: Sunny, Warm

CONTRACTORS ON SITE: HP Environmental Services

VISITORS:

DAILY OPERATIONS: Subcontractors met at site at 07:00.

Tailgate Safety Meeting was held at 07:15.
Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Curt Creager - HP Environmental Services
Randy Miller - HP Environmental Services*

HP Environmental said that there was an oil leak on the 235 excavator. It was fixed prior to work starting this morning. The 235 excavator continued to break and crush the concrete. The bulldozer continued to move the crushed material to the temorary stockpile located in the northeast corner of the pad. An additional HP employee was added to work. He will be sifting through the temporary stockpiles for pieces of concrete which do not meet the 12 inch or less criteria and wetting down the material as needed.

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Envionmental
Paul Casey - Spectrum Services
Harry Mosely - Spectrum Services

Approximately 200 by 100 ft of the top layer of concrete had been removed and partially crushed by the end of the work day. The front loader moved and piled the crushed material to the southeast end of the concrete pad. The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 4:00 and work ended at approximately 4:30.

ACTION ITEMS: 235 excavator oil leak - fixed prior to work this morning

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Wedneday, November 15, 1995

WEATHER: Sunny, Warm

CONTRACTORS ON SITE: HP Environmental Services

VISITORS: Larry Bruskin - CDPH&E, - CDPH&E, - EPA Region VIII

DAILY OPERATIONS: Subcontractors met at site at 07:00.

Tailgate Safety Meeting was held at 07:00

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Curt Creager - HP Environmental Services

Soil was scrapped from the surface of a portion of the concrete pad. The soil had a "pink" color. HP moved the soil into a separate stock pile. Harry issued a Field Memorandum to me and I issued it to SCQA. SCQA responded and tested the stockpile. They took one sample which was homogenized from two hand auger samples taken from two sides of the pile and hand auger at an angle. If the soil is contaminated, Phase II contractor will mix it with the concrete.

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services

Larry Bruskin visited the site today. He indicated to me that he would like to try to downgrade to level D and we should proceed to have the tests ran to do so. He had received a copy yesterday of the proposal that Spectrum put together with Evergreen Environmental's prices. Larry said that I could go ahead and give the "Go Ahead" today. I called Dennis and told him that Larry had given the go for downgrading proceedings and asked what our next step should be. Dennis called me back and said that he had spoken with Rebecca Thomas of the EPA and he said that she indicated that she didn't want to pay for the downgrading. I told him that Larry thought that Rebecca wanted to downgrade. Dennis had a conference call with Larry and Rebecca and he called back and said that they did not want us to downgrade. So I told Harry and he called Spectrum to cancel the extra testing.

The 235 excavator was working in the most southwest corner of the pad. The water truck was located outside the exclusion tape, so the HP employee which was spraying the water stood on the outside of the exclusion tape and sprayed the operation. Larry Bruskin thought that this person was inside the exclusion area without a respirator; however, we observed the operation and the worker was actually outside the exclusion area; however, the 235 crusher head was placed just outside the exclusion tape so that the worker without respirator protection could look at it. Larry indicated to Dennis (later in a telephone conversation) that he did not approve of the equipment, or any parts of the equipment, leaving the exclusion area without being decontaminated. I explained this to Harry and Paul Casey of Spectrum and they spoke to HP about it and HP agreed that they were wrong and that they would try not to do anything like that again.

The 235 excavator continued to remove and crush the concrete pad and the front loader moved and piled the crushed material to the southeast end of the concrete pad. The portion of the pad which was originally taped off as an "Exclusion zone" is approximately 75% demolished. The stockpiles may be scheduled for payment survey soon. The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 5:00 and work ended at approximately 5:15.

ACTION ITEMS: CDPH&E gave go ahead to start proceedings to potentially downgrade the PPE level; however, EPA indicated that they did not want to pay for it. A decision was made at the end of the day that we would not downgrade. Soil (pink in color) which was found on top of the concrete slab was stockpiled and was later tested by the SCQA.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Thursday, November 16, 1995

WEATHER: Sunny, Warm, Shifting Winds

CONTRACTORS ON SITE: HP Environmental Services

VISITORS: Matt Roberts - Evergreen Environmental, Larry Bruskin - CDPH&E, Dan Scheppers - CDPH&E, Marion Galant -CDPH&E, and Rebecca Thomas - EPA Region VIII

DAILY OPERATIONS: Subcontractors met at site at 07:00.

Tailgate Safety Meeting was held at 07:00

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services

Soil was scrapped from the surface of a portion of the concrete pad. The soil had a "pink" color. HP moved the soil into a separate stock pile. Harry issued a Field Memorandum to me and I issued it to SCQA. SCQA responded and tested the stockpile. They took one sample which was homogenized from two hand auger samples taken from two sides of the pile and hand auger at an angle. If the soil is contaminated, Phase II contractor will mix it with the concrete.

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services
Curt Creager - HP Environmental Services

The CDPH&E and EPA visited the site today. Paul Casey, Elizabeth Baracani, and Ray Miskines accompanied the group around the site. All areas major were visited. Everyone was suited up and decontaminated before leaving the site.

The 235 excavator continued to remove and crush the concrete pad and the front loader moved and piled the crushed material to the southeast end of the concrete pad. A 235 Excavator with a hydraulic hammer attachment and 235 Excavator with a ripping attachment. Another HP employee (Ron Miller) was added to the staff. He was fit tested and went through a Health and Safety Briefing. His H&S certificates were copied and filed. The portion of the pad which was

originally taped off as an "Exclusion zone" is approximately 80% demolished. A portion of the south concrete wall was removed. Dust was kept under control by watering. It was determined that a person should always be on the water truck unless natural moist conditions exist. In order to keep the work going, HP decided that only one person at a time would break for lunch so the equipment can continually be utilized and someone is available to run the water truck.

The decon buckets were moved closer to the trailer and plastic was placed below the buckets and secured to the ground with bricks. Hooks were added to the "dirty area" of the decon trailer so that used tyvex could be stored in that area. Approximately 50% of the PPE which had been used and was being stored at the initial decon area was bagged and taken into control by Spectrum because it was overflowing. Spectrum/HP/SvE/and their visitors will dispose of their used PPE in the trailer in the appropriate bins. I spoke with Ray M. (SCQA) about the disposal procedures and he did not know what they were planning to do with the PPE. I asked if they were going to have it tested and he did not know.

The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 5:15 and work ended at approximately 5:30.

ACTION ITEMS: Exclusion tape will be moved to extend the exclusion zone.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Friday, November 17, 1995

WEATHER: Sunny, Warm, Light winds from the south

CONTRACTORS ON SITE: HP Environmental Services

VISITORS: John Student - City & County of Denver - Environmental
Larry Bruskin - Colorado Dept. Of Public Health and the Environment
Rob Eber - Colorado Attorney Generals Office

DAILY OPERATIONS: Subcontractors met at site at 06:50.

Tailgate Safety Meeting was held at 07:00

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services
Jeff Langen - HP Environmental Services

Exclusion tape was moved and additional fence posts were placed onsite to extend the exclusion zone to cover more of the concrete pad.

The 235 excavator crushed the large pieces of concrete, the 235 Excavator with a hydraulic hammer attachment broke up the southwest portion of the pad, the 235 Excavator with a ripping attachment broke up the concrete pad in the middle portion and moved the large pieces of concrete to the north (behind), and then the front loader moved and piled the large pieces of concrete near the crusher and also the crushed material onto the established stockpile which is located in the southeast corner of the concrete pad. The portion of the pad which was originally taped off as an "Exclusion zone" is approximately 85% demolished. More of the south concrete wall was removed. Dust was kept under control by watering. It was necessary to keep someone on the watering all day. Visual dust from out operation was observed by the SCQA (Ray) and he indicated that it needed to be controlled.

A different sequence of concrete was observed in the southwest portion of the pad. The concrete

consisted of a 4" concrete slab, 3" asphalt, 12" soil (black in color), and 6" concrete slab. The soil was allowed to be mixed with the concrete after Dan Hinds (SCQA) was contacted and it was agreed that separating the soil from the concrete would be almost impossible. This circumstance had occurred

A coordination meeting was held at 111:30. Dan Hinds, John Gabriele, Paul Casey, Harry Moseley, and I were present. It was determined that the Phase II stockpile would be measured for payment at the northeast portion of the concrete pad (where it is currently being stockpiled). Then the concrete debris could be moved (via dump truck) to the bottom of the trench when John's group (Phase I) gets done with some cuts located east of the trench. John indicated that this could happen the early part of next week. Dan Hinds indicated that he would contact the surveyors to measure the stockpile on Monday. Dan also wanted us to use the stockpiled soil (soil exceeding the SSL) which has been stock piled in the north area by Phase I when we place the concrete in the trench. Phase II will be able to move the concrete away from the east wall even though it may effect the integrity of the boundary fence. Dan indicated that soil could be pushed up against the fence bottom if it starts to fail when the concrete is being removed. If the soil doesn't hold the fence in place, John's group will need to reinforce the fence.

The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 5:15 and work ended at approximately 5:30. Both phases are planning to work both Saturday and Sunday this week from 07:00 to 17:00. The 235 Excavator with a hydraulic-mounted crusher broke down at the end of the day. It was planned for servicing on Saturday and Sunday and is planned to return on Monday.

ACTION ITEMS:

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Monday, November 20, 1995

WEATHER: Partly Sunny, Chilly, Gentle winds from the North

CONTRACTORS ON SITE: HP Environmental Services

VISITORS:

DAILY OPERATIONS: Subcontractors met at site at 06:50.

Tailgate Safety Meeting was held at 07:00

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services

Exclusion tape was moved to the south to extend the exclusion zone to cover the concrete pad which had been originally used for a staging area for Phase I.

A dumpster was brought on site to load the scrap metal. The scrap metal was washed in the dumpster and the runoff was allowed to go onto the ground. The 235 Excavator with a ripping attachment was used to move the steel from the pile to the dumpster.

The 235 Excavator with a hydraulic crusher was returned this morning. The 235 excavator crushed the large pieces of concrete and the 235 Excavator with a hydraulic hammer attachment broke up the concrete pad. The front loader moved and piled the large pieces of concrete near the crusher and also the crushed material onto the established stockpile which is located in the southeast corner of the concrete pad. Dust was kept under control by watering.

It was determined that the Phase II stockpile would be measured for payment at the northeast portion of the concrete pad (where it is currently being stockpiled).

The demolition subcontractors (HP Environmental) left the exclusion zone at approximately____ and work ended at approximately _____.

ACTION ITEMS:

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM OU-9 PHASE II RA
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Tuesday, November 21, 1995

WEATHER: Sunny, Mild, Gentle winds from the North

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services, Inc.

VISITORS: John Student, City of Denver

DAILY OPERATIONS:

Arrive onsite 0830. Review Material Handling Plan, weekly summaries, CDPHE/EPA agreement to handle invoicing and change orders.

Walked site 1030 - 1200. Phase I is marking off west zone for confirmation sampling. North outlier is being level graded by removing the stockpile of contaminated soil and filling in low lying areas. Portions of the E1 zone are being excavated of soil meeting the screening criteria.

Prepared an example invoice format for Spectrum from 1200 - 1400.
Larry Bruskin arrives onsite at 1330. We walk the site together from 1430 - 1600. Portions of the stockpile were found to be contaminated and are being moved to the north outlier.
Confirmation sampling was begun in the west zone at 1530. A concrete crest was being poured over a section of the new sewer line that contained pipe below spec.

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services
Dennis Boll - Sverdrup Environmental
Larry Bruskin - CDPHE
Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services

Left site at 1700. HP Environmental is continuing to work at night to crush concrete to less than 12 inches.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Tuesday, December 5, 1995

WEATHER: Sunny, Chilly

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services

VISITORS: Larry Bruskin - CDPH&E

DAILY OPERATIONS: Subcontractors met at site at 06:50.

Tailgate Safety Meeting was held at 07:00

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services
Myrion Saylor - RMCI

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services

Resolution meeting was held at 08:00 in the SvE/Spectrum trailer. The SCQA sampling protocol for the soil excavation was discussed. According to Dan Hinds - ERM, three (3) versions of the specs have gone out: one in Sept. (15th), another in mid to late Sept. (22nd) and another in October (28th). The SCQA sampling protocol was changed for the Sept. 22nd version. Spectrum was given the bid prior to the 22nd and they did not bid their price based on SCQA sampling other than verification samples. I called Dennis about this discrepancy and he said that he would get back with me after speaking with Dan Hinds and Rebecca Thomas - EPA Region VIII.

I asked Larry Bruskin about signature on the manifest for the rums. He said he would get back with me regarding an answer of who would sign the manifest. Later that morning, Rebecca Thomas called and said that she would sign the manifest for the drums.

The excavators encountered a large vault foundation under an existing foundation in the mid-northwest portion of the concrete demolition area. This foundation appears to be approximately 15 feet deep and approximately 25 feet in a N/S direction and 15 ft in an E/W direction. The

excavator with the ripping attachment is removing the walls. Soil which sat around the structural walls and inbetween the vault had to be removed. The soil in the vault contains various debris such as brick, wood, steel, and soil . This vault has cuase the demolition to slow down.

The outlying monoliths were brokenup by the excavator with a hydraulic hammer attachment today. These pieces were located in the outlying areas.

A Notice To Proceed for the transportation and placement of the rubbleized concrete and soil which exceeded the site screening criteria was given to Spectrum today by SvE. SvE also gave a Change Order approval for the drum removal by Spectrum.

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The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 15:45 and work ended at approximately 17:10.

ACTION ITEMS:

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Wednesday, December 6, 1995

WEATHER: Sunny, Chilly

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services

VISITORS: Mike Gross - Sverdrup Environmental

DAILY OPERATIONS: Subcontractors met at site at 06:50.

Tailgate Safety Meeting was held at 07:00

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services
Myrion Saylor - RMCI

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services

The excavators continue to try to remove the large vault foundation. The structure appears to run beneath the rubbleized pile of concrete/soil which is a stockpile of materials from the demolition of the concrete pad. The remainder of the foundation will not be able to be removed until the pile is moved. The vault continues to cause the demolition to slow down. The excavator with the ripping attachment continues to remove the vault walls. A backhoe takes the concrete to the concrete rubbleizing pile. An excavator with the crushing attachment continues to crush concrete to meet the less than 12 inches criteria. The other excavator with a crushing attachment was down because a pin broke and it needs a replacement.

The excavator with a hammer attachment was deconned with a steamcleaner and is ready for removal from the site. The SCQA will look over and make sure that the excavator with a hammer attachment is properly decontaminated prior to leaving the site.

Additional red flagging was placed around the site in the Phase II working areas so that they

could be delineated from the Phase I operations. The large trench area which was due to the southwest corner footing was taped off for safety purposes.

The personal decontamination pad was moved to the west edge of the concrete pad demolition area.

A category determination for the soil which had some brick and wood intermixed was turned over to the direction of the SCQA. The soil remains in a long N/S pile west of the large stockpile. The SCQA will test the soil and if it is less than the site screening criteria levels, it may treated as fill for below the stormwater detention pond.

The most westerly wall was removed today. Both excavators with a crushing attachment were running by mid-day. It was determined that they would work throughout the weekend to get caughtup with the crushing of material.

****

The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 15:45 and work ended at approximately 17:10.

ACTION ITEMS:

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Thursday, December 7, 1995

WEATHER: Sunny, Cold

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services

VISITORS: Larry Bruskin - CDPH&E

DAILY OPERATIONS: Subcontractors met at site at 07:00.

Tailgate Safety Meeting was held prior to entering the work zone.

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services
Myrion Saylor - RMCI

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services

The press activity event took place at the southwest portion of the site just east of the entrance gate. Bill Yellowtail - EPA Region VIII, Gale Norton - Attorney General, and Patti Schwayder - CDPH&E gave some small speeches. A certificate of appreciation was given to RobCo and Home Depot for their cooperation.

The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 15:30 and work ended at approximately 1700.

ACTION ITEMS:

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Friday, December 8, 1995

WEATHER: Sunny, Cold (15 °F)

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services

VISITORS:

DAILY OPERATIONS: Subcontractors met at site at 06:50.

Tailgate Safety Meeting was held at 07:00

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services
Myrion Saylor - RMCI

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services

The initial debris/rubble pile which was stockpiled is being crunched with the excavator with a crushing attachment.

The excavator with a hammer attachment was removed from the site at approximately 10:15 am.

**The soil with some wood, brick, and concrete debris which was found inside the concrete fingers of the foundation was tested by the SCQA today. The short, ,long pile which was placed west of the initial rubbleized concrete pile was found to exceed the site screening criteria and the large pile which was located north of the rubbleizing operation (the pile with more wood, brick, and concrete mixed with the soil) was found to be less than the Site Screening Criteria. But, it was decided that this material would be difficult to separate from the concrete and brick and it would be treated as rubbleized material and would be the first material to be placed in the trench.

The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 15:30 and work ended at approximately 1700.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Monday, December 11, 1995

WEATHER: Partly Sunny, Mild

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services

VISITORS: Larry Bruskin - CDPH&E

DAILY OPERATIONS: Subcontractors met at site at 07:00.

Tailgate Safety Meeting was held prior to entering the work zone.

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services
Myrion Saylor - RMCI

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services

A dump truck arrived on site today so that the rubbleized material could be moved into the west trench. Only one excavator with a crushing attachment remains on site.

Meeting was held at 13:00. It was determined that the rubbelized piles would move into the west trench tomorrow. The west trench and rubbleized piles would be surveyed tomorrow am.

The concrete stocpiled continues to be crunched with the excavator with a crushing attachment. The bulldozer moves the concrete to the pile and the rubbleized material to the stockpile.

The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 15:30 and work ended at approximately 1700.

ACTION ITEMS:

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Tuesday, December 12, 1995

WEATHER: Sunny, Warm

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services

VISITORS:

DAILY OPERATIONS: Subcontractors met at site at 07:00.

Tailgate Safety Meeting was held prior to entering the work zone.

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services
Myrion Saylor - RMCI

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services

The second hauling truck moved approximately 7 loads before it broke down. The large dump truck moved soil from the initial rubbleized pile to the west trench until noon, then the soil with the wood, brick, and concrete debris was moved to the west trench. A large bulldozer arrived on the site at approximately 15:30. It will be used for the compaction of the material in the west trench. A large bucket was placed on the excavator which had the crushing attachment at the beginning of the job. This bucket will be used to load the rubbleized material into the haul truck.

It was determined that our surveyors needed the exact elevations at the "0" points on the site. Ken Schacklin of ERM Rocky Mountain was contacted and he said he could retrieve the data that was needed; however, he needed an O.K. from Mike Keller - ERM (Project Manager). I tried to reach Mike Keller several times, left messages, and voice mail. He did not return my calls. So this issue will have to be resolved tomorrow.

The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 15:30 and work ended at approximately 1700.

ACTION ITEMS: Get an answer from ERM about the survey data.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Wednesday, December 13, 1995

WEATHER: Sunny, Warm, Windy - early afternoon

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
Rocky Mountain Consultants (RMC)

VISITORS: Larry Bruskin - SDPH&E

DAILY OPERATIONS: Subcontractors met at site at 07:00.

Tailgate Safety Meeting was held prior to entering the work zone.

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services
Myrion Saylor - RMCI

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services
Chad Cox - RMC
Rick England - RMC

The excavator with the large bucket continues to put rubbleized concrete into the hauling trucks (two additional tandums were brought on site today to haul material into the trench) which in turn takes it to the west trench where the large bulldozzer flattens, mixes, and places the material. The excavator with a crushing attachment continues to rubbleize the concrete. The rubbleizing of the stockpiled (thus far) material was completed today along with the concrete from the scale house area. Additional concrete removal from the vault and the remaining concrete pads will start tomorrow.

The surveyors received the survey data of existing elevations from the survey done on December , 1995 and the area that have not been disturbed were surveyed in August, 1995. The surveyors were able to verify some of the points, but others were as much as 1 foot difference. The surveyors will stake the cuts in the north zone as soon as they can aquire the proper information. The surveyors are planning to meet with the SCQA surveyors tomorrow to discuss the points.

Additional survey data was requested from myself to Ken Schacklin with ERM- Rocky Mountain for preconstruction survey points in the North Zone. He said that he would give those to Dana Hinds - ERM for delivery to SvE tomorrow morning.

The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 16:30 and work ended at approximately 17:00.

ACTION ITEMS: Survey data needs to be clarified.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Thursday, December 14, 1995

WEATHER: Sunny, Warm, Windy

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
Rocky Mountain Consultants (RMC)

VISITORS:

DAILY OPERATIONS: Subcontractors met at site at 07:00.

Tailgate Safety Meeting was held prior to entering the work zone.

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services
Myrion Saylor - RMCI

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services
Chad Cox - RMC
Rick England - RMC

The excavator with the large bucket continues to put rubbleized concrete into the hauling trucks. An additional off-road hauling truck (27 cubic yards) was brought on site today. There were four trucks hauling material from the stock pile to the west trench today. One of the on-road hauling trucks was taken off site towards the end of the day. The D-8 bulldozer loader continues in the west trench where it flattens, mixes, and places the material. The excavator with a crushing attachment continues to rubbleize the concrete. Some of the vault located in the northeast portion of the site and was under the rubbleized pile was removed today. Therefore, additional concrete was put on the rubbleizing stockpile.

The surveyors received the survey data of existing elevations from the survey done in August, 1995 for the north zone. The surveyors will stake the cuts in the north zone on Saturday. The surveyors were not able to meet with the SCQA surveyors today, but they will try to get with them on Saturday to discuss the errors that they are seeing.

The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 16:30 and work ended at approximately 17:00.

ACTION ITEMS: Survey data still needs to be clarified.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Friday, December 15, 1995

WEATHER: Sunny and Warm

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
Rocky Mountain Consultants (RMC)

VISITORS:

DAILY OPERATIONS: Subcontractors met at site at 07:00.

Tailgate Safety Meeting was held prior to entering the work zone.

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services
Myrion Saylor - RMCI

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services
Chad Cox - RMC
Rick England - RMC

The excavator with the large bucket continues to put rubbleized concrete into the hauling trucks. An additional off-road hauling truck (27 cubic yards) was brought on site today. There were four trucks hauling material from the stock pile to the west trench today. One of the on-road hauling trucks was taken off site towards the end of the day. The D-8 bulldozer loader continues in the west trench where it flattens, mixes, and places the material. The excavator with a crushing attachment continues to rubbleize the concrete. Some of the vault located in the northeast portion of the site and was under the rubbleized pile was removed today. Therefore, additional concrete was put on the rubbleizing stockpile.

The surveyors received the survey data of existing elevations from the survey done in August, 1995 for the north zone. The surveyors will stake the cuts in the north zone on Saturday. The surveyors were not able to meet with the SCQA surveyors today, but they will try to get with them on Saturday to discuss the errors that they are seeing.

The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 16:30 and work ended at approximately 17:00.

ACTION ITEMS: Survey data still needs to be clarified.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Monday, December 18, 1995

WEATHER: Scattered snow showers, cold,

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
Rocky Mountain Consultants (RMC)

VISITORS: Larry Bruskin - CDPH&E

DAILY OPERATIONS: Subcontractors met at site at 07:00.

Tailgate Safety Meeting was held prior to entering the work zone.

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services
Myrion Saylor - RMCI

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services
Chad Cox - RMC
Rick England - RMC

At the 1:00 Progress Meeting, Dan Hinds indicated that he was going to direct Sverdrup to demolish all the old Sewer. He said he would issue a letter by Tuesday morning.

The excavator with the large bucket moved into the north outlyer and started cuts. Rubbleized material is being hauled into the east triangle area. The west trench was completed up to the elevation of 5225 MSL with concrete/soil. Work will continue in this area later in the week. In order to cut the trenches and maintain a 1 to 1 slope for the utility trenches, the west trench will be filled with soil and then the utility trenches will then be cut.

There were three trucks hauling material from the stock piles to the east triangle trench today: one end dump, and two terexes. The D-8 bulldozer loader continues in the west trench where it flattens, mixes, and places the material.

The excavator with a crushing attachment continues to rubbleize the concrete. Some more of the vault located in the northeast portion of the site and was removed today. There was concrete foundation pieces as thick as 3 feet. A hydraulic hammer attachment is needed to break up these large pieces of concrete. The excavator with a hammer attchment is scheduled to arrive on site on Tuesday. The hammer will break up the large pieces of concrete is place in the vault area and the the eastern portion of the north.

The geotechnical and surveying team was on site today. They continue to watch the placement of material and survey the north zone and they surveyed the cuts in the East and West Outlier and the East Zone 2.

The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 16:45 and work ended at approximately 17:10.

ACTION ITEMS:

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Tuesday, December 19, 1995

WEATHER: Cloudy, cold

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
Rocky Mountain Consultants (RMC)

VISITORS: Larry Bruskin - CDPH&E

DAILY OPERATIONS: Subcontractors met at site at 07:00.

Tailgate Safety Meeting was held prior to entering the work zone.

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services
Myrion Saylor - RMCI
Dan L. Smith - HPES

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services
Chad Cox - RMC

The excavator with the large bucket continues to cut soil in the north outlyer and load the soil into one of the three hauling trucks that were working today. Rubbleized material is being crushed in place. Soil placement in the west trench continues with the large front loader (bull dozer) and three haulcing trucks. Towards the end of the day, the soil was not wetted down so that freezing would not be a problem tomorrow. The geotchnical subcontract -CTC recommended this placement method since heavy freeze is expected this

There were three trucks hauling material from the soil in the north outlying area to the west trench today: one tandem (end dump) and two terexes, a 27 and 20 cubic yards . The D-8 bulldozer loader continues in the west trench where it flattens, mixes, and places the material. Additional concrete foundations were discovered in the north outlyer area today during the excavation of soils in the north outlyer area.

The excavator with a crushing attachment continues to rubbleize the concrete that is coming from different foundations found in the north outlying areas or from the vault which was located in the northwest corner of the concrete foundation. Some more of the vault located in the northeast portion of the site and was also removed today. The hydraulic hammer attachment is breaking oup the large foundatin pieces in place in the vault area.

The geotechnical personnel (Chad Cox) was on site today. He continues to watch the placement of material and stake cut depths in the north zone.

The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 16:45 and work ended at approximately 17:10.

Nuclear tests (moisture and density) were taken today the results indicated the density was low in 50 % of the tests - rerolling of the soil was needed. Chad told the dozer operator that he needed to compact the soil more, so they did. 95% is optimum moisture.

ACTION ITEMS: Surveyors are planning to stake out the east and west outlyers, east zone 1 and east zone 2

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Thursday, December 21, 1995

WEATHER: Cloudy, cold, light snow in afternoon

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
Rocky Mountain Consultants (RMC)

VISITORS: Larry Bruskin - CDPH&E

DAILY OPERATIONS: Subcontractors met at site at 07:00.

Tailgate Safety Meeting was held prior to entering the work zone.

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services
Myrion Saylor - RMCI
Dan L. Smith - HPES

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services
Chad Cox - RMC

The excavator with the large bucket continues to cut soil in the north outlyer and load the soil into one of the three hauling trucks that were working today. Rubbleized material is being crushed in place. Soil placement in the west trench continues with the large front loader (bull dozer) and three hauling trucks. Towards the end of the day, the soil was not wetted down so that freezing would not be a problem tomorrow. The geotchnical subcontract -RMC recommended this placement method since heavy freeze is expected this evening.

There were three trucks hauling material from the soil in the north outlying area to the west trench today: one tandem (end dump), terex (20 cubic yards), and a 27 cubic yard (Euclid). The D-8 bulldozer loader continues in the west trench where it flattens, mixes, and places the material.

The excavator with a crushing attachment continues to rubbleize the concrete that is coming from different foundations found in the north outlying areas or from the vault which was located in the

northwest corner of the concrete foundation. The remainder of the vault located along the north side of the original concrete foundation was removed today and the crusher is crushing the concrete to pieces less than 12 inches. The hydraulic hammer may be used to break up the concrete foundations in the north outlyer areas.

The geotechnical personnel (Chad Cox) was on site today. He continues to watch the placement of material in the west trench and he took proctors - density (nuclear), and moisture. The % compaction was _____..

The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 16:45 and work ended at approximately 17:10.

Nuclear tests (moisture and density) were taken today the results indicated the density was low in 50 % of the tests - rerolling of the soil was needed. Chad told the dozer operator that he needed to compact the soil more, so they did. 95% is optimum moisture.

ACTION ITEMS: Surveyors are planning to stake out the east and west outlyers, east zone 1 and east zone 2

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Friday, December 22, 1995

WEATHER: Partly sunny, Cold

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
Rocky Mountain Consultants (RMC)

VISITORS:

DAILY OPERATIONS: Subcontractors met at site at 07:00.

Tailgate Safety Meeting was held prior to entering the work zone.

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services
Myrion Saylor - RMCI
Dan L. Smith - HPES

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services
Chad Cox - RMC

The excavator with the large bucket continues to cut soil in the north outlyer and load the soil into one of the three hauling trucks that were working today. Rubbleized material is being crushed in place. Soil placement in the west trench continues with the large front loader (bull dozer) and three hauling trucks. The soil was not wetted down so that freezing would not be a problem for the long Christmas weekend.

There were three trucks hauling material from the soil in the north outlying area to the west trench today: one tandem (end dump), terex (20 cubic yards), and a 27 cubic yard (Euclid). The D-8 bulldozer loader continues in the west trench where it flattens, mixes, and places the material.

The excavator with a crushing attachment continues to rubbleize the concrete that is coming from different foundations found in the north outlying areas or from the vault which was located in the northwest corner of the concrete foundation.

The geotechnical personnel (Chad Cox) was on site today. He continues to watch the placement of material in the west trench.

CQA (Kim Joslin) took soil samples from the north zone area for verification of soils which exceeded the site screening criteria (SSC). Several samples had distinct coloring such as black/yellow, orange, or yellow staining. The soil staining was not consistant with the soil which exceeded the SSC; however, she wanted us to make our operator (Randy Miller) aware of the discolored soils and those which have (in the past) shown up as soils exceeding SSC.

Several foundations are still being discovered in the north outlyer. These are being removed with the excavator. If there is soil above the concrete, the soil is considered to be above SSC. The large pieces of concrete are brought up with the excavator and moved via truck to the crusher. If the peices are too large for the crusher, the hydraulic hammer will break it up.

The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 16:45 and work ended at approximately 17:10.

Nuclear tests (moisture and density) were taken today the results indicated the density was low in 50 % of the tests - rerolling of the soil was needed. Chad told the dozer operator that he needed to compact the soil more, so they did. 95% is optimum moisture.

ACTION ITEMS:

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Wednesday, December 27, 1995

WEATHER: Partly sunny, Cold

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
Rocky Mountain Consultants (RMC)

VISITORS:

DAILY OPERATIONS: Subcontractors met at site at 07:00.

Tailgate Safety Meeting was held prior to entering the work zone.

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services
Myrion Saylor - RMCI
Dan L. Smith - HPES

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services
Chad Cox - RMC

The Progress Meeting was held today because the construction crews had the 23,24,25, and 26th off for the Christmas holiday.

The excavator with the large bucket continues to cut soil in the north outlyer and load the soil into one of the three hauling trucks that were working today. Rubbleized material is being crushed in place. Soil placement in the west trench continues with the large front loader (bull dozer) and three hauling trucks. The soil was not wetted down so that freezing would not be a problem for the long Christmas weekend.

There were three trucks hauling material from the soil in the north outlying area to the west trench today: one tandem (end dump), terex (20 cubic yards), and a 27 cubic yard (Euclid). The D-8 bulldozer loader continues in the west trench where it flattens, mixes, and places the material.

The excavator with a crushing attachment continues to rubbleize the concrete that is coming from different foundations found in the north outlying areas or from the vault which was located in the northwest corner of the concrete foundation.

The geotechnical personnel (Chad Cox) was on site today. He continues to watch the placement of material in the west trench.

The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 16:45 and work ended at approximately 17:10.

Nuclear tests (moisture and density) were taken today the results indicated the density was low in 50 % of the tests - rerolling of the soil was needed. Chad told the dozer operator that he needed to compact the soil more, so they did. 95% is optimum moisture.

ACTION ITEMS:

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Thursday, December 28, 1995

WEATHER: Sunny, Cold

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
Rocky Mountain Consultants (RMC)

VISITORS:

DAILY OPERATIONS: Subcontractors met at site at 07:00.

Tailgate Safety Meeting was held prior to entering the work zone.

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services
Myrion Saylor - RMCI
Dan L. Smith - HPES

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services
Chad Cox - RMC

The excavator with the large bucket continues to cut soil in the north outlier and load the soil into one of the three hauling trucks that were working today. Some soil was segregated because of the CQA results. Generally, the gray-colored soil had concentrations above the soil screening criteria (lead - 1200 mg/kg and above). Rubbleized material is being crushed in place. Soil placement in the west trench continues with another large D-8 front loader (bull dozer) and three hauling trucks.

There were three trucks hauling material from the soil in the north outlying area to the west trench today: two terex (20 and 25 cubic yards), and a 27 cubic yard (Euclid). The bulldozer/ loader continues in the west trench where it flattens, mixes, and places the material.

The excavator with a crushing attachment continues to rubbleize the concrete that is coming from different foundations found in the north outlying areas.

The geotechnical personnel (Chad Cox) was on site today. He continues to watch the placement of material in the west trench and take samples for density and moisture.

The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 16:45 and work ended at approximately 17:10.

The large Bull Dozer was demobilized today due to equipment breakdown; however, another D-8 dozer was brought on site today to replace it. The small dozer is being used to put the rubbleized concrete in piles for payment survey which is planned for Friday, December 29, 1995.

After the soil was removed in the north outlier, the 235 excavator with at 3 cubic yard bucket attachment (trackhoe (backhoe)) moved to the west outlier, and then the east outlier. The west outlier was finished by the end of the day.

ACTION ITEMS: Surveyors need to stake the cuts in the offsets for east zone 1 and checking the east zone 2 cuts.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Friday, December 29, 1995

WEATHER: Sunny, Cold

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
Rocky Mountain Consultants (RMC)

VISITORS:

DAILY OPERATIONS: Subcontractors met at site at 07:00.

Tailgate Safety Meeting was held prior to entering the work zone.

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services
Myrion Saylor - RMCI
Dan L. Smith - HPES

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Harry Moseley - Spectrum Services
Chad Cox - RMC
Rick England - RMC

The excavator with the large bucket continues to cut in East Zone 2 and load the soil into the three hauling trucks that were working today. Rubbleized material is being crushed in place. Soil placement in the west trench continues with the large D-8 front loader and the three hauling trucks.

There were three trucks hauling material from the soil in the East Zone 2 area to the west trench today: two terex (20 and 25 cubic yards), and a 27 cubic yard (Euclid). The bulldozer/ loader continues in the west trench where it flattens, mixes, and places the material. The lifts were laid down as "dry" lifts starting at approximately 12:30 pm.

The excavator with a crushing attachment continues to rubbleize the concrete that is coming from different foundations found in the north outlying areas. The excavator with the hammer attachment is breaking pieces of concrete in the southeast portion of what was the concrete pad.

The geotechnical personnel (Chad Cox and Rick England) were on site today. They staked cuts in the East Zone 2. Chad continues to watch the placement of material in the west trench and take samples for density and moisture.

The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 16:45 and work ended at approximately 17:00.

The small dozer is putting the dry soil, which was placed by the Phase II contractor in between the east and west triangle, in the hauling trucks for placement in the west trench because the soil from the East Zone 2 is too wet and may freeze over the weekend. The rubbleized concrete was placed in a piles for payment survey which is now planned for Saturday, December 30, 1995.

ACTION ITEMS: Surveyors will need to explain the surveyors payment locations on Tuesday, January 2, 1996 so that SvE/Spectrum can review the surveyor locations. The piles are irregular and have several mounds, so the possibility for some miscalculations may occur.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Tuesday, January 2, 1996

WEATHER: Partly Cloudy, Cold, approximately 3 inches of snow on the ground.

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
Rocky Mountain Consultants (RMC)

VISITORS: Larry Bruskin - CDPH&E
Rebecca Thomas - EPA Region VIII

DAILY OPERATIONS: Subcontractors met at site at 07:00.

Tailgate Safety Meeting was held prior to entering the work zone.

Those present were: Dennis Ritz- HP Environmental Services
Kevin Gallaghere - HP Environmental Services
Randy Miller - HP Environmental Services
Ron Miller - HP Environmental Services
Myrion Saylor - RMCI
Dan L. Smith - HPES

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Environmental
Harry Moseley - Spectrum Services
Paul Casey - Spectrum Services
Chad Cox - RMC
Rick England - RMC

According to the survey data in the North Zone, the cuts that were done by HPES last week were not down to the final cut grade, it appears that incorrect bottom of Lead (BOL) elevations were given to Spectrum. Therefore, the cut depths were inaccurate. The explanation, negotiation, and decision for future survey information will take place during the 1:00 pm progress meeting.

CTC-Geotek indicated that the soil looked good and HPES was compacting and wetting the soil sufficiently.

During the 1:00 Progress meeting, Dan Hinds (ERM) indicated that they would have Nolte (CQA Surveyors) resurvey the north zone and instead of just putting the 100 foot centers they would also stake the 25 foot centers so that Spectrum/SvE's surveyors would not have to go BACK and

redo what they already did. The Phase II surveyors would still do a spot check to verify the elevations.

The concrete rubbleization may be on a Critical Path because it is taking longer to rubbleize than expected because there is SO MUCH more than originally anticipated. However, it is too early to decide whether this is going to push the overall schedule back. Dan Hinds indicated that soil can be placed below the concrete as long as the concrete does not exceed the elevations for the specific trenches.

The timbers/railroad ties that have been encountered were discussed. Dan indicated that those can be placed at the VERY bottom of the trenches as long as they are not located right next to each other, but they are spread apart. We (Spectrum/SvE) agreed with this disposal method. Otherwise, the timbers would need to be cleaned off and tested.

Dan Hinds, Kim Joslin, Harry Moseley and myself walked to the north zone so Dan could see the foundations. Dan told Kim that she could test the soil under the surface from the existing cuts, and if those turned up exceeded the SSC then Spectrum/SvE could take all the soil out that is on top of the concrete foundations. Otherwise, the soil may have to be segregated.

The excavator with the large bucket continues to cut in East Zone 2 and load the soil into the three hauling trucks that were working today. Rubbleized material is being crushed in place. Soil placement in the west trench continues with the large D-8 and the smaller front loaders and the three hauling trucks. No water was used today due to the 3 inches of snow that covered the ground.

There were three trucks hauling material from the soil in the East Zone 2 area to the west trench today: two terex (20 and 25 cubic yards), and a 27 cubic yard (Euclid). The bulldozer/ loaders continue to flattens, mixes, and places the material. The lifts were laid down as "dry" as possible (due to the snow) lifts starting at approximately 12:30 pm.

The excavator with a crushing attachment continues to rubbleize the concrete that is coming from foundations. The excavator with the hammer attachment is breaking pieces of concrete in the southeast portion of what was the concrete pad during the morning.

The geotechnical (Chad Cox) were on site today. Chad continues to watch the placement of material in the west trench and take samples for density and moisture.

The demolition subcontractors (HP Environmental) left the exclusion zone at approximately 16:45 and work ended at approximately 17:00.

The soil in the East Zone 2 was tested by the CQA and there were concentrations of 18,000 mg/kg of Lead and 500 mg/kg of Arsenic.

The air data taken thus far into the project has only had two incidences of Zinc above the detection limit and nothing has exceeded the PEL. The reason for the Zinc detection may be that

the Zinc is naturally higher in concentration in the soil in the background concentrations and throughout the site.

ACTION ITEMS: Nolte will surveyor the north zone and place them in 25 foot centers. CQA will test the deeper soils in the north zone by taking samples from the existing cuts. This will let us know if the soil exceeds SSC all the way to the concrete foundations.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Wednesday, January 3, 1996

WEATHER: Sunny, Windy, Mild

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
Rocky Mountain Consultants (RMC)

VISITORS: None

DAILY OPERATIONS:

Subcontractors met at site at 07:00. Tailgate Safety Meeting was held prior to entering the work zone.

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Corporation
Dennis Boll - Sverdrup Corporation
Harry Moseley - Spectrum Services
Chad Cox - RMC
Rick England - RMC
Howard McMarthy - Spectrum Services

Elizabeth Baracani was onsite for Sverdrup in the morning. Dennis Boll of Sverdrup arrived onsite in the afternoon. Harry Moseley and Dennis Boll walked over the site in the afternoon to oversee progress. Concrete sizing continues in the East 1 Zone, and excavation of contaminated soils continues in the East 2 Zone. Soils are being placed in the West Trench.

Equipment in operation includes one 3 cy backhoe, one dozer, one backhoe with crusher attachment, and two Terex dump trucks. A backhoe with hydraulic hammer was also present, but not in operation. The 3 cy backhoe is excavating soils in E2 and placing in the two dump trucks for placement and compaction in the West trench. The dozer is supporting the backhoe that is sizing the concrete.

During our walkover, we observer deep foundation slabs in the North Outlier and East 2 Zone. These will be removed as extra cost items. Dennis Boll reminded Harry Moseley that pay items for soils removal and placement is based on excavated volumes. As such, Harry Moseley reported to the CQAO that additional surveying is needed in the North Outlier and North Finger. The stockpile in the East 3 Zone will also be smoothed out and surveyed.

Harry Moseley indicated that approximately 1,800 cy of extra concrete demolition, and 4,000 cy of extra contaminated soil will require removal and placement before Phase II is completed.

ACTION ITEMS: The CQAO surveyors will need to stake out and survey the North Outlier, North Finger, East Zone 3 concrete stockpile for measurement for payment. The surveyors will also stake out the West Outlier for additional soils to be removed.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Thursday, January 4, 1996

WEATHER: Cloudy changing to light Snow, Cold

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
Rocky Mountain Consultants (RMC)

VISITORS: Larry Bruskin, CDPHE

DAILY OPERATIONS:

Subcontractors met at site at 07:00. Tailgate Safety Meeting was held prior to entering the work zone.

Personnel on site today for Phase II include: Dennis Boll - Sverdrup Corporation
Harry Moseley - Spectrum Services
Chad Cox - RMC
Paul Casey - Spectrum Services

Concrete sizing continues in the East 1 Zone, and excavation of contaminated soils continues in the East 2 Zone. Soils are being placed in the West Trench.

Equipment in operation includes one 3 cy backhoe, one dozer, one backhoe with crusher attachment, and two Terex dump trucks. A backhoe with hydraulic hammer was also present, but not in operation. The 3 cy backhoe is excavating soils in E2 and placing in the two dump trucks for placement and compaction in the West trench. The dozer is supporting the backhoe that is sizing the concrete.

The CQAO surveyors staked out and surveyed the East 3 Zone concrete stockpile, the North Outlier, the West Outlier, for measurement for payment.

Change Order Memorandum No. 6 was delivered to Spectrum for $10,748.00 to compensate removal of deep foundations in the north edge of the building foundation, and five days of general conditions costs to complete the estimated 1800 cy of extra concrete demolition within the brick plant foundation.

Technical Memorandum No. 010865Q00(1.1)-36 was prepared to Rebecca Thomas, USEPA Region 8 RPM, to present an estimate to complete for subcontractor costs for Phase II. Rebecca

Thomas was contacted, and she plans to visit the site tomorrow to review the memorandum. The memorandum was copied to Larry Bruskin of CDPHE.

Light snow began to fall about 11 am. By 3 pm, one-half inch had accumulated. Work continued despite cold, snowy weather.

ACTION ITEMS: None.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Friday, January 5, 1996

WEATHER: Flurries, Very Cold

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services

VISITORS:

DAILY OPERATIONS:

Subcontractor met at site at 07:00. Tailgate Safety Meeting was held prior to entering the work zone.

Personnel on site today for Phase II include: Dennis Boll - Sverdrup Corporation
Harry Moseley - Spectrum Services

No concrete demolition or earthwork was performed today, because of 3 inches of snow cover and very cold temperatures, 10 to 20 degrees Farenheit. The decision not to work was made jointly by Spectrum, CQAO, and the Engineer. Spectrum will also not work tomorrow.

Temperatures are predicted to warm into the forties by Sunday, so Spectrum is planning to startup again on Monday by placing concrete rubble in the West 2 Area, and excavating in the East 2 and East 3 Zones.

In discussions with Harry Moseley, he indicated that Spectrum will request a schedule extension for 12 days, because of the extra volume of concrete and contaminated soils encountered at the site. This will bring the scheduled date of Phase II completion to Feb. 2, 1996.

HPES has 3 workers onsite performing equipment maintenance. Dennis Boll left the site at 12 noon to catch an earlier flight to St. Louis.

ACTION ITEMS: None.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Monday, January 8, 1996

WEATHER: Sunny, Cold

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
RMC

VISITORS: Larry Bruskin - CDPH&E

DAILY OPERATIONS:

Subcontractor met at site at 07:00. Tailgate Safety Meeting was held prior to entering the work zone.

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Corporation
Paul Casey - Spectrum Service
Harry Moseley - Spectrum Services
Chad Cox - RMC
Rick England - RMC

Concrete sizing continues in the East 1 Zone, and excavation of contaminated soils continues in the East 2 Zone. Soils are being placed in the West Trench. The trench was filled to grade today.

Equipment in operation includes one 3 cy backhoe (excavator), one bull dozer, one excavator with crusher attachment, and three Terex dump trucks: one articulated and two end dumps. A small tandem (Bob tail) is also working at the site. A backhoe with hydraulic hammer was also present and it continues to break large pieces of concrete. The 3 cy backhoe is excavating soils in E2 and placing in the two dump trucks for placement and compaction in the West trench while the large dozer compacts the soil. The smaller dozer assists the excavator with a crushing attachment whil it sizes the concrete.

The 1:00 Progress Meeting was held. Phase II personnel were present. Phase III personnel did not take place; however, a meeting was scheduled for next Monday (Jan. 15th) to discuss possible mobilization for Phase III. It was also noted in the meeting that Phase II will ask for a schedule extension for two more weeks based on the amount of concrete that has been discovered and the extra soil the has exceeded the SSC.

The surveyors (RMC) staked out all the West Zone .

ACTION ITEMS: None.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Tuesday, January 9, 1996

WEATHER: Sunny, Cold

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
RMC

VISITORS: Larry Bruskin - CDPH&E

DAILY OPERATIONS:

Subcontractor met at site at 07:00. Tailgate Safety Meeting was held prior to entering the work zone.

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Corporation
Paul Casey - Spectrum Service
Harry Moseley - Spectrum Services
Chad Cox - RMC
Rick England - RMC

Concrete sizing continues in the East 1 Zone, and excavation of contaminated soils continues in the East 2 Zone. Soils are being placed in the West Branch. The trench was filled to grade yesterday. There was 1600 cy of soil that was placed on the sewer finger and Phase I had pushed some soil over into the West Trench. Phase I said that they placed that soil with a scraper; however, Phase II had worked the soil. CQA decided that the only way to resolve this was to do a test pit and take compaction tests. This was arranged through the CQA with their Geotech subcontractor.

Equipment in operation includes one 3 cy backhoe (excavator), one bull dozer, one excavator with crusher attachment, and three Terex dump trucks: one articulated and two end dumps. A small tandem (Bob tail) is also working at the site. A backhoe with hydraulic hammer was also present and it continues to break large pieces of concrete. The 3 cy backhoe is excavating soils in the West Zone and placing in the two dump trucks for placement and compaction in the West Finger while the large dozer compacts the soil.

The surveyors (RMC) shot all the West Zone and the entire North Zone grid. The surveyors also labeled the grid, labeled offsets, and cuts.

ACTION ITEMS: Test Pit in the west edge of the west trench (just east of the old sewer) is scheduled for tomorrow - January 10, 1995.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Wednesday, January 10, 1996

WEATHER: Sunny, Warm, but windy

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
RMC

VISITORS: Larry Bruskin - CDPH&E

DAILY OPERATIONS:

Subcontractor met at site at 07:00. Tailgate Safety Meeting was held prior to entering the work zone.

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Corporation
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services
Chad Cox - RMC
Rick England - RMC

Concrete sizing continues in the East 1 Zone, and excavation of contaminated soils continues in the East 2 Zone. Soils are being placed in the West Branch.

The 1600 cy of soil that was placed on the sewer finger and Phase I had pushed some soil over into the West Trench was tested today by the CQA Geotechnical subcontractor. The densities met the other densities (116 psi); however, the moisture was a little lower (dryer than the optimum). Two nuclear tests were done and both tests were within 1%. Also, a video and photos were reviewed by SvE/Spectrum and they both indicated the Spectrum/HPES worked the soil which is east of the Sewer in the West Trench. The CQA Geotechnical subcontractor (CTC) also took soil from the test pit to run a proctor. The large bull dozer operator from HPES (Kevin Gallager) excavated the test pit to the depth which Ray Miskines (CQA - ERM) indicated and Ray told Kevin when to stop.

Equipment in operation includes one 3 cy backhoe (excavator), one bull dozer, one excavator with crusher attachment, and three Terex dump trucks: one articulated and two end dumps. The excavator with a crushing attachment finished the large pieces of concrete that had been set up for it and the operator left the site until Monday. The small vault located on the southwest side of the concrete pad had not been crushed, but is planned for Monday. The North Zone concrete

demolition may also start on Monday, if not, the excavator with the crushing attachment may run out of concrete. The bob tail is also working at the site. A backhoe with hydraulic hammer was also present and it did some breaking of concrete before the operator started using the water truck. The wind picked up about 11:00 am and so an operator was assigned to the water truck while the soil was picked up from the West Zone and placed into the hauling trucks. The 3 cy backhoe is excavating soils in the West Zone and placing in the two dump trucks for placement and compaction in the West Finger while the large dozer compacts the soil.

Dan Hinds of ERM (CQA) indicated the Spectrum would get compensated for the working and compaction of the 1600+ cy of soil that Phase I placed in the West Trench and so would Phase I for placing the soil.

The surveyors (RMC) shot the boundaries of the AOC and approximately 16 points out of the utility corridor. Nuclear gauge was not able to be unlocked because the lock broke, so no Nuclear tests could be run. A proctor was run today from the fill that is going into the West Zone.

On another note, Spectrum Faxed the invoice to Dennis Boll, gave Elizabeth Baracani a copy of the invoice, and TRIED to Fed Ex the original copy of the invoice to SvE in St. Louis,; however, the Fed Ex got placed in the wrong outgoing box (Priority Mail instead of Fed Ex), so the originals did not make it to St. Louis. Spectrum is doing everything they can to try to track the Fed Ex.

ACTION ITEMS: RMC will have to run 30 tests tomorrow to make up for the tests that were not run today.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Thursday, January 11, 1996

WEATHER: Sunny, Warm

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services

VISITORS:

DAILY OPERATIONS:

Subcontractor met at site at 07:00. Tailgate Safety Meeting was held prior to entering the work zone.

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Corporation
Harry Moseley - Spectrum Services

Excavation of contaminated soils were completed in the East 2 Zone. Excavation in West Zone continue and the soils are being placed in the West Branch.

Equipment in operation includes one 3 cy backhoe (excavator), one bull dozer, one excavator was added a large bucket for excavation, and three Terex dump trucks: one articulated and two end dumps. The excavator with a crushing attachment did not work today, because there was no more concrete until the area in the North Zone is tested by the CQA for the soils above the concrete.

The small vault located on the southwest side of the concrete pad was moved so that it can be crushed on Monday. The North Zone cuts were made starting in easrly afternoon. Two excavators, a front loader (bull dozer) and the hauling trucks were focused in that area so that testing could be done on Friday and concrete could be moved (and soil meeting SSC could be segragated) on Saturday so concrete would be available for crushing on Monday. The bob tail is also working at the site. The soils from the North zone were placed in the West Finger while the large dozer compacts the soil.

The surveyors (RMC) did not work today.

ACTION ITEMS: None

crushing attachment did not work today.

The CQA tested the north area and some of the areas exceeded SSC, so HP is going to have to do some small cuts prior to excavating the concrete.

The surveyors (RMC) staked out all the utility corridor today. RMC is also going to take some density and moisture tests with the Nuclear Density Gauge.

The results from the CQA protor test in the Test Pit from the area east of the old sewer that was tested on Wednesday indicated the densities were within maximum dry density (95% of 100% compaction - max. Dry density); however, the moisture was a little below the 10% optium (between 7 and 13%) because of the differences in the materials (clay and granular material).

ACTION ITEMS: Start in the North Area making small cuts and removing the concrete.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Friday, January 12, 1996

WEATHER: Sunny, Warm

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
RMC

VISITORS: Rebecca Thomas - EPA Region VIII
Richard Sisk - EPA Region VIII Lawyer
Larry Bruskin - CDPH&E

DAILY OPERATIONS:

Subcontractor met at site at 07:00. Tailgate Safety Meeting was held prior to entering the work zone.

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Corporation
Harry Moseley - Spectrum Services
Chad Cox - RMC
Richard England

Excavation in West Zone continues and the soils are being placed in the West Branch.

Excavation of the rubbleized pile of concrete is taking place while one excavator and one tandem move the soil to the East Triangle.

A meeting was called by CQA because the moisture and density tests were not within the specs; however, the spec inicated that moisture is RECOMMENDED to be within + or - 3%. Therefore, the meeting concluded that those areas which had denisties less than the 95% would be retested and recalculated and if the results indicate less than the requiremnts, further action would be taken to resolve the differences.

Additional compaction and moisture tests were collected in the West Branch to check results from previous tests with the CQA geotck subcontractor and RMC subcontractor.

Equipment in operation includes one 3 cy backhoe (excavator), one bull dozer, one excavator was added a large bucket for excavation, and three Terex dump trucks: one articulated and two end dumps. One dump truck stopped work today due to a hydraulic pump. The excavator with a

crushing attachment did not work today.

The CQA tested the north area and some of the areas exceeded SSC, so HP is going to have to do some small cuts prior to excavating the concrete.

The surveyors (RMC) staked out all the utility corridor today. RMC is also going to take some density and moisture tests with the Nuclear Density Gauge.

The results from the CQA protor test in the Test Pit from the area east of the old sewer that was tested on Wednesday indicated the densities were within maximum dry density (95% of 100% compaction - max. Dry density); however, the moisture was a little below the 10% optium (between 7 and 13%) because of the differences in the materials (clay and granular material).

ACTION ITEMS: Start in the North Area making small cuts and removing the concrete.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Monday, January 15, 1996

WEATHER: Sunny, Warm, slightly windy

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
RMC

VISITORS:

DAILY OPERATIONS:

Subcontractor met at site at 07:00. Tailgate Safety Meeting was held prior to entering the work zone.

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Corporation
Harry Moseley - Spectrum Services
Paul Casey - Spectrum Services
Chad Cox - RMC
Richard England - RMC

Excavation in West Zone continues and the soils are being placed in the West Branch. The soils in the North Zone were sampled again and it was determined that the soils in the most North corner met SSC and the soils south along the east boundary fence and the rubble above the concrete are soils that exceed the SSC. The concrete is excavated with an excavator with a bucket attachment. The concrete is moved to the East Triangle so that it may be rubbleized tomorrow by the excavator with a crushing attachment.

The Utility Trench which runs North/South was started today by an excavator with a bucket attachment and two terex trucks which are hauling the material to the West Branch where it is compacted and placed with a dozer. The dozer is also taking time out to pull back soils for geotechnical tests with the Nuclear density meter to clarify discrepancies with the Geotechnical Subcontractor and the CQA Geotechnical Subcontractor (CTC-Geotek). The discrepancies tests should be completed today.

The Progress Meeting was held at 09:00 instead of 13:00 because Mike Keller had another appointment today at 13:00. It was determined that the CQA Surveyors are somewhat behind schedule and they may cause some delays for Phase II. It was determined that their schedule would be evaluated after they had finished today's work. RMC (Phase II Surveyor) may be

required to stake some areas for Phase II. The drums will be manifested this week. Another drum was discovered in the West Zone and it will be over packed and placed with the other drums in the staging area located south of the job trailer area of the site.

A Phase II - III Preconstruction Meeting was held today at 13:00. It was determined that Phase III would not start until February 5th, 1996. The CQA (Dan Hinds) and the Home Depot representative (Owners Rep- Paul Casey) will discuss (Friday) if a 10 Day Notification Letter can be issued to Phase III on Friday. All parties agreed that at this time Phase II and III on the site at the same time would not be advantageous to either party.

Equipment in operation includes two 3 cy backhoes (excavator), one bull dozer, three Terex dump trucks, and one tandem hauling (dump) truck: one articulated and two end dumps. The excavator with a crushing attachment did not work today.

The CQA tested the north area and some of the areas exceeded SSC, so HP is going to have to do some small cuts prior to excavating the concrete. The concrete is removed from the North Area and some of the soil (north part of the north area) was moved to the side and is soil meeting the SSC.

The surveyors (RMC) staked the utility corridor and part of the AOC area today. RMC took density and moisture tests with the Nuclear Density Gauge to clarify the geotech discrepancies..

The CQA surveyors (Nolte) is somewhat behind on the surveying. The RMC survey team MAY have to survey some of the areas so that Phase II and work in these areas without delay.

ACTION ITEMS: Nolte Surveying may be a critical path for Phase II.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Tuesday, January 16, 1996

WEATHER: Sunny, Warm, slightly windy

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
RMC

VISITORS:

DAILY OPERATIONS:

Subcontractor met at site at 07:00. Tailgate Safety Meeting was held prior to entering the work zone.

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Corporation
Harry Moseley - Spectrum Services
Paul Casey - Spectrum Services
Chad Cox - RMC

Excavation in the utility trench continnues and the soils are being placed in the West Branch. The soils in the North Zone were excavated above the concrete and the concrete was removed and placed in the east triangle where it is sized with the excavator with a crushing attachment. At approximately 13:30 pm some transite asbestsos pieces were found near the foundations in the North Zone. The pieces were already broken and were approximately 4 by 6 inches. Approximately 6 pieces were discovered and set aside. CQA was advised of the asbestos discovery and they observed the situation. CQA decided that the material be set aside; however, the remainder of the concrete could be removed from the North Zone. Very dark colored sand was also discovered in the North Zone and CQA will work with the Engineer and decide which action should take place to address the cresote-looking material.

The Utility Trench (North/South) continued today by an excavator with a bucket attachment and three terex trucks which are hauling the material to the West Branch where it is compacted and placed with a dozer. The dozer is putting the soil and compacting it in the West Finger.

Equipment in operation includes two 3 cy backhoes (excavator), one bull dozer, three Terex dump trucks, and one tandem hauling (dump) truck: one articulated and two end dumps. The excavator with a crushing attachment worked in the East Triangle today and some of the Terex

trucks brought the concrete to the East Triangle from the North Zone.

It was determined by the CQA and the owners Representative (Paul Casey) that the rubble (brick) that was discovered in the North Zone would be set aside for Phase III to deposit; however,there was discolored soil (yellow and green) that was found to contain up to 240,000 mg/kg (24%) Lead, 3100 mg/kg arsenic, and ***20,000*** mg/kg Zinc; therefore, this soil was treated as contaminated and given to Phase II to handle. Some of these discolored soils had gotten mixed in with the rubble, so Phase II was directed to move it and then Phase III would not.

RMC took about 10 or 11 density and moisture tests. Densities were within 95% and the moistures were within the + or - 3%.

ACTION ITEMS: The discolored material in the North Zone will be evaluated by the CQA Engineer in the morning. First thing the soil will be wetted and the operator of the excavator and the truck driver will be required to wear respirators and the H&S (Evergreen) will take air samples while the material is being excavated.

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Wednesday, January 16, 1996

WEATHER: Cloudy, Colder, snow predicted for the afternoon

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
RMC

VISITORS: Larry Bruskin - CDPH&E
Brian Knaus - Sverdrup Environmental

DAILY OPERATIONS:

Subcontractor met at site at 07:00. Tailgate Safety Meeting was held prior to entering the work zone.

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Corporation
Harry Moseley - Spectrum Services
Richard England - RMC
Chad Cox - RMC

Excavation in the East Zone 2 took place in the morning. Some bedrock (sandstone that is plated like shale) was removed because the cuts were below the rock. CQA (Ray M.) Talked to the operators and indicated that if bedrock is encountered, then the cuts should cease.

Contaminated soils in the North Zone were removed. The contamination extended north and the discolored soils were followed and excavated with the excavator. There were two Terex hauling trucks and one excavator assigned to the North Zone. All the personnel directly working with these soils were required to wear respirators. Even the Bull Dozer operator in the West Triangle (where the material was placed) was required to wear a respirator.

The H&S (Evergreen) took air samples while the material from the North Zone is excavated, placed, and compacted.

Two operators (Randy and Ron Miller) quit at approximately 10:30 am. They had a conflict with the HPES Supervisor (Curt C.). I spoke with the operators. Randy indicated that Curt got in the excavator and he was spilling contaminated soil all over the North zone. Ron indicated that Curt has required that they keep wearing the same respirators over and over again and he had asked if he could wear a respirator the other day and Curt replied that he did not need one. Ron also said

that Curt said that when I had asked him not to chew gum and make sure to wear his safety glass that Curt replied to Ron that he should not listen me. Both persons were concerned about working with soils that are extremely contaminated. I spoke with Curt and he indicated that Randy was not filling the trucks and was only taking ½ bucket fulls. He said that they both have had bad attitutes this past week and they wanted an excuse to go home. He also said that he knew they were going to get mad when he started working the excavator.

The soils in the North Zone were excavated. Any of the soils that were in contact with the discolored soils. above the concrete and the concrete was removed and placed in the east triangle where it is sized with the excavator with a crushing attachment. At approximately 13:30 pm some transite asbestsos pieces were found near the foundations in the North Zone. The pieces were already broken and were approximately 4 by 6 inches. Approximately 6 pieces were discovered and set aside. CQA was advised of the asbestos discovery and they observed the situation. CQA decided that the material be set aside; however, the remainder of the concrete could be removed from the North Zone. Very dark colored sand was also discovered in the North Zone and CQA will work with the Engineer and decide which action should take place to address the cresote-looking material.

The Utility Trench (North/South) continued today by an excavator with a bucket attachment and three terex trucks which are hauling the material to the West Branch where it is compacted and placed with a dozer. The dozer is putting the soil and compacting it in the West Finger.

Equipment in operation includes two 3 cy backhoes (excavator), one bull dozer, three Terex dump trucks, and one tandem hauling (dump) truck: one articulated and two end dumps. The excavator with a crushing attachment worked in the East Triangle today and some of the Terex trucks brought the concrete to the East Triangle from the North Zone.

It was determined by the CQA and the owners Representative (Paul Casey) that the rubble (brick) that was discovered in the North Zone would be set aside for Phase III to deposit; however,there was discolored soil (yellow and green) that was found to contain up to 240,000 mg/kg (24%) Lead, 3100 mg/kg arsenic, and ***20,000*** mg/kg Zinc; therefore, this soil was treated as contaminated and given to Phase II to handle. Some of these discolored soils had gotten mixed in with the rubble, so Phase II was directed to move it and then Phase III would not.

RMC layed out two AOC points. One of the control points had been run over. Chad completed Proctor #3 and is working on Proctor #4.

RMC determined that soil could not be placed properly because the cold weather and snow at approximately 11:30.

ACTION ITEMS:

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Thursday, January 18, 1996

WEATHER: Sunny, Cold (10° F), Approximately 2 inches of snow on ground

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
RMC

VISITORS: Larry Bruskin - CDPH&E
Brian Knaus - Sverdrup Environmental

DAILY OPERATIONS:

Subcontractor met at site at 07:00. Tailgate Safety Meeting was held prior to entering the work zone.

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Corporation
Harry Moseley - Spectrum Services
Richard England - RMC
Chad Cox - RMC

There was approximately 2 inches of snow on the ground in the morning and the temperature was approximately 10° F so soil could not be placed and compacted. However, the excavator with the crushing attachment was able to continue crushing concrete in the West Triangle. The bulldozer (D-8) flattened out an area in the East Zone (north of the stockpile of soil meeting the SSC) so that several of the soil piles could be measured for payment. Some rubble and concrete pieces from around the site were moved to piles or into the West Trench for rubbleizing. A haul road was made to allow access for the scrap dealer to the dumpster where the scrap steel has been placed.

A site walk through was conducted by Brian Knaus and Elizabeth Baracani of Sverdrup Environmental. Brian is the Health and Safety Officer for Sverdrup Environmental. He indicated that he would like two air samples from Elizabeth. He gave me the instruments to do the sampling and we reviewed the procedures. He also noted several concerns and suggestions for the site.

Equipment in operation includes one 3 cy backhoe (excavator), one bull dozer, and one Terex dump truck. The excavator with a crushing attachment worked in the East Triangle today and the Terex truck or the excavator brought the concrete to the East Triangle from various areas of the

site.

RMC determined that it was too cold to cut or place any material today.

RMC laid out the remaining AOC points, put in offset stakes in East Zone 3, and toe points for the utility corridor to check whether the utility was in line.

ACTION ITEMS:

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Friday, January 19, 1996

WEATHER: Sunny, Cold (30-40° F), Approximately 1 inch of snow on ground, wind picked up at approximately 11:00 am. Winds were gusty in the afternoon.

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
RMC

VISITORS:

DAILY OPERATIONS:

Subcontractor met at site at 07:00. Tailgate Safety Meeting was held prior to entering the work zone.

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Corporation
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services
Chad Cox - RMC

There was approximately 1 inch of snow remaining on the ground and the temperature was approximately 40° F so soil was able to be placed and cut starting at approximately 10:30. Soil was removed from the East Zone 3 today with the excavator with a large bucket and the Terex hauling trucks (3). The excavator with the crushing attachment continues crushing concrete in the West Triangle and moved onto the West Zone to crush miscellaneous concrete pieces. The crusher is getting through most of the concrete and may be completed by the end of the day.

Equipment in operation includes one 1.75 cy backhoe (225 excavator), one bull dozer (D-8) , and 3 Terex dump trucks. The excavator with a crushing attachment worked in the East Triangle today and the West Zone. The crusher may be completed with crushing today. The track loader and the larbe bucket excavator (235) are not working today due to mechanical problems. Therefore, the soil is removed much slower than Wednesday.

The winds picked up and were gusty staring at approximately 11:00; however, due to the previous snow the soils were moist and dust was controlled naturally. Gust were upto 34 miles per hour; however, those were not sustained winds.

RMC will take several Nuclear Gauge tests tomorrow because there is only a limited amount of soil removed and placed today due to the mechanical problems with the large excavator and the trackloader. A Proctor (#6) will also be collected tomorrow. Proctor #5 was collected on

Saturday the 13th of January. The Protor #5 was a split sample with CTC from a retest of #27 a,b,c,&d. Only two 6 inch lifts were put in today. The last lift from Wednesday was ripped one time and 6 inches of soil was added to it and it was ripped two more times before another 6 inches was added to it and then that was wheel-rolled in by a Terex and compacted.

The entire crew is planning to work on Saturday. There is snow planned for Saturday. The cold is suppose to continue through next week.

I walked the entire site and found various pieces of concrete for the crusher. I informed Harry of my findings and he and I looked at those areas. It was also determined that there is some deep cuts in the East Zone on the west side and that maybe we should go there asap before the cruhser leaves the site. Harry and Curt will discuss this issue.

ACTION ITEMS: None

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Monday, January 22, 1996

WEATHER: Snowing, Cold (20° F), Approximately 1 inch of snow on ground

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
RMC

VISITORS: Larry Bruskin - CDPH&E

DAILY OPERATIONS:

Subcontractor met at site at 07:00. Tailgate Safety Meeting was held prior to entering the work zone.

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Corporation
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services
Chad Cox - RMC

It started snowing at approximately 09:00. Soil is going to be placed until the geotechnical subcontractor (RMC) indicates that the soil is too cold to compact.

On Saturday, excavation took place in the West Zone near the West Free cut and placed. Soil was also moved fromEst Zone 3 - the cuts were reduced becuase of the discovery of clean sands and gravel. The cuts were reduced by approximately 1/3 in that area. Two new personnel were added to HPES personnel. One operator and one truck driver. The operator was operating the 977 (small) trackloader and the driver is driving one of the Terex hauling trucks.

****There was approximately 1 inch of snow remaining on the ground and the temperature was approximately 40° F so soil was able to be placed and cut starting at approximately 10:30. Soil was removed from the East Zone 3 today with the excavator with a large bucket and the Terex hauling trucks (3). The excavator with the crushing attachment continues crushing concrete in the West Triangle and moved onto the West Zone to crush miscellaneous concrete pieces. The crusher is getting through most of the concrete and may be completed by the end of the day.

Equipment in operation includes one 1.75 cy backhoe (225 excavator), one bull dozer (D-8) , and 3 Terex dump trucks. The excavator with a crushing attachment worked in the East Triangle today and the West Zone. The crusher may be completed with crushing today. The track loader

and the larbe bucket excavator (235) are not working today due to mechanical problems. Therefore, the soil is removed much slower than Wednesday.

The winds picked up and were gusty staring at approximately 11:00; however, due to the previous snow the soils were moist and dust was controlled naturally. Gust were upto 34 miles per hour; however, those were not sustained winds.

RMC will take several Nuclear Gauge tests tomorrow because there is only a limited amount of soil removed and placed today due to the mechanical problems with the large excavator and the trackloader. A Proctor (#6) will also be collected tomorrow. Proctor #5 was collected on Saturday the 13th of January. The Protor #5 was a split sample with CTC from a retest of #27 a,b,c,&d. Only two 6 inch lifts were put in today. The last lift from Wednesday was ripped one time and 6 inches of soil was added to it and it was ripped two more times before another 6 inches was added to it and then that was wheel-rolled in by a Terex and compacted.

The entire crew is planning to work on Saturday. There is snow planned for Saturday. The cold is suppose to continue through next week.

I walked the entire site and found various pieces of concrete for the crusher. I informed Harry of my findings and he and I looked at those areas. It was also determined that there is some deep cuts in the East Zone on the west side and that maybe we should go there asap before the cruhser leaves the site. Harry and Curt will discuss this issue.

ACTION ITEMS: None

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Tuesday, January 23, 1996

WEATHER: Cold (10° F)

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
RMC

VISITORS: Larry Bruskin - CDPH&E (stopped by in the afternoon)

DAILY OPERATIONS:

Subcontractor met at site at 07:00. It was determined by Spectrum, HPES, RMC, and the CQA and decided that it was too cold to place soil. The weather outlook at 07:00 was a high of 20 degrees F. Therefore, it was determined that it was not worth it to work today. The outlook for tomorrow was a high in the low 40's.

I went to the Golden office worked on the H&S spreadsheet for the job, expense reports, and called the National Weather Service to get a prolong weather prediction. According to the Weather Service, the warmest day next week is suppose to Monday with highs in the 40's. There is no high pressure system; therefore, the weather will continue to be variable. There is a cold air in Canada so it could make it to Colorado next week. It appeared to the weather service that the weather will remain on an up and down pattern varying from 10 to 20's for the lows and highs in the upper 30s or low 40s (typical January/February weather).

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Corporation
Harry Moseley - Spectrum Services
Chad Cox - RMC

ACTION ITEMS: None

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Wednesday, January 24, 1996

WEATHER: Sunny, Cold (30 - 40 °F)

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
RMC

VISITORS: Larry Bruskin - CDPH&E

DAILY OPERATIONS:

Subcontractor met at site at 07:00. Tailgate Safety Meeting was held prior to entering the work zone.

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Corporation
Paul Casey - Spectrum Services
Harry Moseley - Spectrum Services
Chad Cox - RMC

Temperatures were approximately 40° F so soil was able to be placed and cut starting at approximately 10:30. Soil was removed from the East Zone 1 in the northeastern boundary today with the excavator with a large bucket and the Terex hauling trucks (3).

The excavator with the crushing attachment was not used today; however, there was more concrete discovered, so that concrete was moved to the east triangle where the stock pile of the already crushed concrete exists.

Equipment in operation includes one 1.75 cy backhoe (225 excavator), one bull dozer (D-8) , and 3 Terex dump trucks.

The winds picked up and were gusty staring at approximately 10:00; however, due to the previous snow the soils were moist and dust was controlled naturally until approximately 13:00. The water truck stopped working because a piece of rebar punchered the oil pan at approximately 13:15, so only one load of water was able to be used to control the dust caused from the winds. The dozer stopped working because a hydraulic line broke at approximately 14:00. The crew (HPES) had a meeting at 15:30 so the operators left the site at approximately 14:30 - 15:00 for the day and they will start in tomorrow at 07:00.

88 RMC surveyed the remainder of the utility trench and portions of the AOC that were available form the drawing R-11 (sheet). Also, Chad took some Nuclear Gauge tests ---------. A Proctor (#_) was also collected on _____ and was performed.

The last lift from Tuesday was ripped one time and 6 inches of soil was added to it and it was ripped two more times before another 6 inches was added to it and then that was wheel-rolled in by a Terex and compacted. 88

Harry Moseley, Chad Cox, and I had a meeting at approximately 15:30 to discuss CQA's role in the geotech decisions. CQA geotech subcontractor (CTC) is causing SvE/Spectrum/HPES/RMC to do a substantial amount of extra work (such as test pits and retests). It was determined that there would be no additional test pits done unless it has shown that there were geotechnical problems which were not addressed and changes made during that work to change the properties of the materials that were tested. CTC can work along side RMC; however, if they take tests from the same lift, but not at the same place, this cannot be considered a duplicate samples; therefore, their results do not mean that the results obtained by RMC are not correct.

I wrote a letter requesting that CQA give us the proper information for the AOC area. According to the Survey subcontractor - RMC (Chad Cox/Rick England), they need additional survey information before they can properly stake the AOC. They need points labeled and coordinates and elevations of those points.

ACTION ITEMS: None

SVERDRUP ENVIRONMENTAL, INC.
DAILY SUMMARY
ROBCO - DENVER RADIUM
500 SOUTH SANTA FE AVENUE
DENVER COLORADO

DATE: Thursday, January 25, 1996

WEATHER: Snowing, Cold (20 - 30° F)

CONTRACTORS ON SITE: HP Environmental Services
Spectrum Services
RMC

VISITORS:

DAILY OPERATIONS:

Subcontractor met at site at 07:00. Tailgate Safety Meeting was held prior to entering the work zone.

Personnel on site today for Phase II include: Elizabeth Baracani - Sverdrup Corporation
Harry Moseley - Spectrum Services
Chad Cox - RMC

It started snowing at approximately 09:15. The snow was not consistent. It snows for about ½ hour and then lets up for about ½ hour. The temperatures are lurking around 26 to 32 degrees. Soil is excavated from the Utility Trench (North/South) is placed in the West Finger. This will continue until the geotechnical subcontractor (RMC) indicates that the soil is too cold to compact or that there is too much snow. There is only one excavator working because the other soils are too dry and water would have to be added to them in order to meet compaction requirements; therefore, HPES is concentrating in removing the soils for the utility trench because those soils have already met the moisture requirements and no additional water is needed. The hauling trucks are moving back and forth along the fill area with their loads to help with the compaction because the soils are not being wet down because they are coming from the utility trench.

Equipment in operation includes one 3 cy backhoe (235 excavator), one bull dozer (D-8) ,the small track loader, and 3 Terex dump trucks.

RMC took several Nuclear Gauge tests and they all showed to be withing the specification for compaction. The only tests that failed were those that had some wood and other miscellaneous debris in them. Chad discovered one area that needs to be reworked because it is not meeting the density and moisture. Chad said that this was the lift that was placed yesterday.

After lunch dry soil was excavated with the small track loader to put onto the West Finger to act as a dry lift because it was starting to snow heavily.

At approximately 13:30 it was determined by the Geotechnical Subcontractor that placing material should cease because the temperature dropped to 20 degrees and it was snowing heavily, the winds were blowing, and it was cold. The excavator continued to work the side walls of the trench to establish the 1:1 slope that is required.

Only two 9 inch lifts were put in today. The last lift from Wednesday was dragged 4 to 5 inches one time because there appeared that there was not a hard freeze last night. Approximately 3/4 of the West Finger was covered with the 18 inches of soil before the end of the work day. Two lifts were able to be added to it and then that was wheel-rolled in by the Terex hauling trucks and compacted with the large D-8 dozer.

The entire crew is planning to work on Saturday. The forecast indicates that it will be cold like today tomorrow (Friday) and it may be in the 40's on Saturday. The forecast indicated that Sunday and Monday in the 50's. HPES is not planning to work on Sunday.

The excavator with the crushing attachment was not used today. The concrete that has not been crushed remains on the previously crushed stockpile.

I spoke with Dennis Boll about the insurance information that is needed by Sverdrup Corporation for the Treatment/Disposal of the drums. I relayed this information to Spectrum and they requested that this information be presented in a Field Memorandum. So I put this together today in a Field Memorandum format for Harry Moseley with Spectrum and gave him a copy.

Left the site at approximately 15:45 pm. The outlook for Friday is cold; therefore, work may be called off tomorrow morning.
ACTION ITEMS:

APPENDIX III
Air Monitoring Data

461-0460

EVERGREEN ENVIRONMENTAL CONSULTING CO.

LEAD AIR MONITORING FIELD WORKSHEET

Page ___ of ___

Project: ROBCO Phase/Location: II Date: 10/9/95 Day: Thurs.

Temperature	Wind Speed & Direction	Barometric Pressure	Weather Conditions
/ a.m./p.m.	/ a.m./p.m.	/ a.m./p.m.	

Sample #:	ROBCO#1995-01	-02	-03	-04
Pump #:	L-19	L-09	LAB BLANK	FIELD BLANK
Media:	37mm 0.8μ MCE	→	→	→
Description of Work in Progress:	Concrete Slab Demolition	Concrete Slab Demolition		
Area/Personnel*:	P	P		
Abatement Status**:	D	D		
Location/Description of Worker:	Dennis Ritz -bull dozer -wetting activities	Curt Creager -crusher		
Protective Equipment:	½ FACE APR/TYVEK →			
Calibration Pre:	1.885	1.725		
Calibration Post:	1.505	1.681		
Avg/Mean Flow Rate:	1.655	1.700		
Relative % Difference:	<25%			
Time Start:	0805	0815		
Time Stop:	1555	1550		
Total Minutes:	470	455		
% Time On:	100%	100%		
Total Volume (liters):	778	774		
Laboratory:	RESERVOIRS	RESERVOIRS		
Analytical Method:	AA FLAME	AA FLAME		
Date/Time Results Recieved:	11-10-95 16:30	11-10-95 16:30		
Fibers/Field:	N/A	N/A		
Analytical Results:	ND-Pb,Ag,Cd	ND Pb,Ag,Cd		
Comments:				

Signature: Matt Roberts Date: 11/9/95

* R = Regulated/Containment Area Sample P = Personal Sample F = Fre/Ambient Sample
** Bf = Before/Pre-Ambient P = During Pre-Cleaning/Prep D = During Removal/Abatement C = During Cleaning/Decontamination F = Final/Post Abatement

(SKETCH/DIAGRAM SAMPLE LOCATIONS ON BACK)

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1886
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE I. ARSENIC IN AIR ANALYSIS

RES Job Number:	RES 31466-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	November 09, 1995
Analysis Type:	Arsenic by AA
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Arsenic (ug)	Detection Limit (ug/m3)	ARSENIC CONCENTRATION (ug/m3)
A-ROBCO-110995-01	EM	208643	778	BDL	0.6	BDL
A-ROBCO-110995-02	EM	208644	774	BDL	0.6	BDL
A-ROBCO-110995-03	EM	208645	0	BDL	---	---
A-ROBCO-110995-04	EM	208646	0	BDL	---	---

DATA QA

BDL = Below Detection Limit
Detection Limit = 0.5ug

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE I. CADMIUM IN AIR ANALYSIS

RES Job Number:	RES 31466-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	November 09, 1995
Analysis Type:	Cadmium by AA
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Cadmium (ug)	Detection Limit (ug/m3)	CADMIUM CONCENTRATION (ug/m3)
A-ROBCO-110995-01	EM	208643	778	BDL	0.643	BDL
A-ROBCO-110995-02	EM	208644	774	BDL	0.646	BDL
A-ROBCO-110995-03	EM	208645	0	BDL	---	---
A-ROBCO-110995-04	EM	208646	0	BDL	---	---

BDL = Below Detection Limit
Detection Limit = 0.5 ug

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1898
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE I. LEAD IN AIR ANALYSIS

RES Job Number:	RES 31466-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	November 09, 1995
Analysis Type:	Lead by Flame AA, NIOSH 7082
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Lead (ug)	Detection Limit (ug/m3)	LEAD CONCENTRATION (ug/m3)
A-ROBCO-110995-01	EM	208643	778	BDL	3.2	BDL
A-ROBCO-110995-02	EM	208644	774	BDL	3.2	BDL
A-ROBCO-110995-03	EM	208645	0	BDL	---	---
A-ROBCO-110995-04	EM	208646	0	BDL	---	---

BDL = Below Detection Limit
Detection Limit = 2.5 ug

DATA QA

during laboratory hours unless after-hours service is authorized

Special Instructions:

	Client Sample Number	Volume	EM #
1.	A-BOBCO-010995-01	778	203613
2.	-02	774	41
3.	-03	BLANK	45
4.	-04	BLANK	46
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			

Number of samples received: 4 (Use as many additional sheets as needed.)

NOTE: If the package has sustained substantial damage or the custody seal is broken, stop and contact project manager and shipper. RESI will analyze incoming samples based upon information received with those samples. RESI is not responsible for errors or omissions in calculations resulting from the inaccuracy of original data. Turnaround times are based upon times of receipt by Laboratory. Call Laboratory for number of samples guaranteed in short turnaround.

Relinquished By: Matthew Roberts Date/Time: 11-04-95 16:30

Laboratory Use Only

Received By: [signature] Date/Time: 11/9/95 4:30

Carrier: [illegible] Condition of package/custody seal upon receipt: OK

RESULTS:	Contact	Page	Phone	Fax	Date	Time	Initials

SPLITS: Authorization By/Time:

Analytical Method/Turnaround:

rev 3/6/95 Results Due: Results Out:

EVERGREEN ENVIRONMENTAL CONSULTING CO.

revised 5/95

LEAD AIR MONITORING FIELD WORKSHEET

Page ___ of ___

Project: ROBCO Phase/Location: Phase II Date: 11/28/95 Day: Tues.

Temperature	Wind Speed & Direction	Barometric Pressure	Weather Conditions
22°F 0700 / 44°F 1500 a.m./p.m.	NW 5-15 mph a.m./p.m.	/ a.m./p.m.	Partly Cloudy

AROBCO112895

Sample #:	#01	#02	#03			
Pump #:	L-16	BLANK	BLANK			
Media:	37mm 0.8μ MCE	→	→			
Description of Work in Progress:	Concrete slab demolition					
Area/Personnel*:	P					
Abatement Status**:	D					
Location/Description or Worker:	KEVIN GALLAGHER					
Protective Equipment:	LEVEL D					
Calibration Pre:	1.432					
Calibration Post:	1.425					
Avg/Mean Flow Rate:	1.428					
Relative % Difference:	<25%					
Time Start:	0746					
Time Stop:	1526					
Total Minutes:	460					
% Time On:	100					
Total Volume (liters):	657					
Laboratory:	RESERVOIRS					
Analytical Method:	AA FLAME					
Date/Time Results Recieved:	11-29-95 1600					
Fibers/Field:	N/A					
Analytical Results:	BDL; Pb, Cd, As	↓	↓			
Comments:	SOILS WET, SNOW ON GROUND,	SHORT WORK SHIFT DUE TO EQUIPMENT PROBLEMS.				

Signature: [signature] Date: 11/28/95

* R = Removal/Containment Area Sample P = Personal Sample [illegible] Sample
** B= Before/Pre Ambient D = During Pre-Cleaning/Prep D = During [illegible] C = During Cleaning/Decontamination F = Final/Post Abatement

(SKETCH/DIAGRAM [illegible] LOCATIONS ON BACK)

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE I. LEAD IN AIR ANALYSIS

RES Job Number: RES 31913-1
Client: Evergreen Environmental Consulting Co.
Client Project: ROBCO
Date Samples Received: November 28, 1995
Analysis Type: Lead by Flame A.A. NIOSH 7082
Turnaround: 24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Lead (ug)	Detection Limit (ug/m3)	LEAD CONCENTRATION (ug/m3)
A-ROBCO-112895-01	EM	211546	637	BDL	3.8	BDL
A-ROBCO-112895-02	EM	211547	0	BDL	---	---
A-ROBCO-112895-03	EM	211548	0	BDL	---	---

BDL = Below Detection Limit
Detection Limit = 2.5 ug

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE II. CADMIUM IN AIR ANALYSIS

RES Job Number: RES 31913-1
Client: Evergreen Environmental Consulting Co.
Client Project: ROSCO
Date Samples Received: November 28, 1995
Analysis Type: Cadmium by Flame AA, NIOSH 7048
Turnaround: 24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Cadmium (ug)	Detection Limit (ug/m3)	CADMIUM CONCENTRATION (ug/m3)
A-ROSCO-112895-01	EM	211543	657	BDL	0.8	BDL
A-ROSCO-112895-02	EM	211547	0	BDL	---	---
A-ROSCO-112895-03	EM	211548	0	BDL	---	---

BDL = Below Detection Limit
Detection Limit = 0.5 ug

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE III. ARSENIC IN AIR ANALYSIS

RES Job Number: RES 31913-1
Client: Evergreen Environmental Consulting Co.
Client Project: ROBCO
Date Samples Received: November 28, 1995
Analysis Type: Arsenic by Furnace AA
Turnaround: 24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Arsenic (ug)	Detection Limit (ug/m3)	ARSENIC CONCENTRATION (ug/m3)
A-ROBCO-112895-01	EM	211546	657	BDL	0.2	BDL
A-ROBCO-112895-02	EM	211547	0	BDL	—	—
A-ROBCO-112895-03	EM	211548	0	BDL	—	—

BDL = Below Detection Limit
Detection Limit = 0.01 ug

DATA QA

EVERGREEN ENVIRONMENTAL CONSULTING CO.

revised 9/91

LEAD AIR MONITORING FIELD WORKSHEET

Page ___ of ___

Project: ROBCO Phase/Location: PHASE II Date: 12/3/95 Day: MON

Temperature	Wind Speed & Direction	Barometric Pressure	Weather Conditions
30°F, 50°F	20-40 mph	———	windy, clear
a.m./p.m.	a.m./p.m.	a.m./p.m.	

ROBCO12345

Sample #:	#01	#02			
Pump #:	L-14	BLANK			
Media:	37mm 0.8μ MCE				
Description of Work in Progress:	RANDY MILLER.				
Area/Personnel*:	P				
Abatement Status**:	D				
Location/Description or Worker:	Operation of Hammer & also crusher on slab demolition				
Protective Equipment:	TYVEK				
Calibration Pre:	1.820				
Calibration Post:	1.915				
Ave/Mean Flow Rate:	1.867				
Relative % Difference:	< 25%				
Time Start:	0715				
Time Stop:	1550				
Total Minutes:	515				
% Time On:	100				
Total Volume (liters):	962				
Laboratory:	RESERVOIRS				
Analytical Method:	AA FLAME				
Date/Time Results Recieved:	12-4 1632				
Fibers/Field:	NA				
Analytical Results:	ND-Pb, Cd, As				
Comments:	extremely windy				

Signature: Mark Roberts Date: 12/3/95

* R = Restricted/Containment Area Sample P = Perimeter Sample A = Free/Ambient Sample
** B= Before/Pre Abatement D = During Pre-Cleaning/Abatement C = During Clearing/Decontamination F = Final/Post Abatement

(SKETCH SAMPLE LOCATIONS ON BACK)

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE I. LEAD IN AIR ANALYSIS

RES Job Number:	**RES 32036-1**
Client:	**Evergreen Environmental Consulting Co.**
Client Project:	**ROBCO**
Date Samples Received:	**December 04, 1995**
Analysis Type:	**Lead by Flame AA, NIOSH 7082**
Turnaround:	**24 Hour**

Client ID Number		Lab ID Number	Air Volume (L)	Lead (ug)	Detection Limit (ug/m3)	LEAD CONCENTRATION (ug/m3)
A-ROBCO-12495-01	EM	212275	962	BDL	2.6	BDL
A-ROBCO-12495-02	EM	212276	0	BDL	---	---

BDL = Below Detection Limit
Detection Limit = 2.5 ug

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE II. CADMIUM IN AIR ANALYSIS

RES Job Number:	RES 32036-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	December 04, 1995
Analysis Type:	Cadmium by Flame AA, NIOSH 7048
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Cadmium (ug)	Detection Limit (ug/m3)	CADMIUM CONCENTRATION (ug/m3)
A-ROBCO-12495-01	EM	212275	962	BDL	0.5	BDL
A-ROBCO-12495-02	EM	212276	0	BDL	---	---

DATA QA

BDL = Below Detection Limit
Detection Limit = 0.5 ug

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE III. ARSENIC IN AIR ANALYSIS

RES Job Number:	**RES 32036-1**
Client:	**Evergreen Environmental Consulting Co.**
Client Project:	**ROBCO**
Date Samples Received:	**December 04, 1995**
Analysis Type:	**Arsenic by Furnace AA**
Turnaround:	**24 Hour**

Client ID Number		Lab ID Number	Air Volume (L)	Arsenic (ug)	Detection Limit (ug/m3)	ARSENIC CONCENTRATION (ug/m3)
A-ROBCO-12495-01	EM	212275	962	BDL	0.26	BDL
A-ROBCO-12495-02	EM	212276	0	BDL	---	---

DATA QA

BDL = Below Detection Limit
Detection Limit = 0.25 ug

EVERGREEN ENVIRONMENTAL CONSULTING CO.

revised 3/95

LEAD AIR MONITORING FIELD WORKSHEET

Page ___ of ___

Project: ROBCO Phase/Location: Phase II Date: 12/13/95 Day: Wed

Temperature: 50°F / 55F a.m./p.m.

Wind Speed & Direction: 10-15mph to SE / 15-20 to SE a.m./p.m.

Barometric Pressure: ___ / ___ a.m./p.m.

Weather Conditions: Partly Cloudy

Sample #:	ROBCO121395 -01	-02				
Pump #:	#11	Blank				
Media:	37mm 0.8 cel MCE	↓				
Description of Work in Progress:	Concrete slab Demolition					
Area/Personnel*:	P					
Abatement Status**:	D					
Location/Description or Worker:	Kevin Gallaher Trackhoe					
Protective Equipment:	Level D					
Calibration Pre:	1.734					
Calibration Post:	1.657					
Avg/Mean Flow Rate:	1.696					
Relative % Difference:						
Time Start:	0705					
Time Stop:	1540					
Total Minutes:	518 (Time on pump)					
% Time On:	100%					
Total Volume (liters):	879					
Laboratory:	Reservoirs					
Analytical Method:	AA Flame					
Date/Time Results Recieved:						
Fibers/Field:						
Analytical Results:						
Comments:	Windy	↓				

Signature: [signature] Date: 12/13/95

* R = Restricted/Containment Area Sample P = Personal Sample F = Free/Ambient Sample
** B = Before/Pre Ambient P = During Pre-Cleaning/Prep D = During Removal/Abatement C = During Cleaning/Decontamination F = Final/Post Abatement

(SKETCH/DIAGRAM SAMPLE LOCATIONS ON BACK)

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE IV. CADMIUM IN AIR ANALYSIS

RES Job Number:	RES 32233-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROSCO
Date Samples Received:	December 13, 1995
Analysis Type:	Cadmium by Flame AA, NIOSH 7048
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Cadmiu (ug)	Detection Limit (ug/m3)	CADMIUM CONCENTRATION (ug/m3)
ROSW121395-01	EM	213496	879	BDL	0.28	BDL
ROSW121395-02	EM	213497	879	BDL	0.28	BDL

BDL = Below Detection Limit
Detection Limit = 0.25 ug

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE III. ZINC IN AIR ANALYSIS

RES Job Number:	RES 32233-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROSCO
Date Samples Received:	December 13, 1995
Analysis Type:	Zinc by Flame AA, NIOSH 7030
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Zinc (ug)	Detection Limit (ug/m3)	ZINC CONCENTRATION (ug/m3)
ROBW121395-01	EM	213496	879	3.0	0.28	3.4
ROBW121395-02	EM	213497	879	BDL	0.28	BDL

BDL = Below Detection Limit
Detection Limit = 0.25 ug

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE I. LEAD IN AIR ANALYSIS

RES Job Number:	RES 32233-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	December 13, 1995
Analysis Type:	Lead by Flame AA, NIOSH 7082
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Lead (ug)	Detection Limit (ug/m3)	LEAD CONCENTRATION (ug/m3)
ROBW121395-01	EM	213496	879	BDL	2.8	BDL
ROBW121395-02	EM	213497	879	BDL	2.8	BDL

BDL = Below Detection Limit
Detection Limit = 2.5 ug

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE II. ARSENIC IN AIR ANALYSIS

RES Job Number:	RES 32233-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	December 13, 1995
Analysis Type:	Arsenic by Furnace AA, NIOSH 7901
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Arsenic (ug)	Detection Limit (ug/m3)	ARSENIC CONCENTRATION (ug/m3)
ROBW121395-01	EM	213496	879	0.030	0.011	0.034
ROBW121395-02	EM	213497	879	BDL	0.011	BDL

DATA QA

BDL = Below Detection Limit
Detection Limit = 0.01 ug

Client ID Number		Lab ID Number	Air Volume (L)	Lead (ug)	Detection Limit (ug/m3)	LEAD CONCENTRATION (ug/m3)
ROBW121395-01	EM	213496	879	BDL	2.8	BDL
ROBW121395-02	EM	213497	879	BDL	2.8	BDL

DATA QA

BDL = Below Detection Limit
Detection Limit = 2.5 ug

EVERGREEN ENVIRONMENTAL CONSULTING CO.

LEAD AIR MONITORING FIELD WORKSHEET

Page ___ of ___

Project: ROBCO Phase/Location: PHASE II Date: 12/18/95 Day: MON.

Temperature	Wind Speed & Direction	Barometric Pressure	Weather Conditions
/ a.m./p.m.	/ a.m./p.m.	/ a.m./p.m.	

ROBCO 12-1895

Sample #:	#01	#02			
Pump #:	L-03				
Media:	37mm 0.8μ MCE				
Description of Work in Progress:	Concrete Slab - soils/exc.	Blank			
Area/Personnel*:	P				
Abatement Status**:	D				
Location/Description or Worker:	[redacted] Ron Miller Tracloader				
Protective Equipment:	LEVEL D				
Calibration Pre:	1.520				
Calibration Post:	1.354				
Avg/Mean Flow Rate:	1.437				
Relative % Difference:	< 25				
Time Start:	0700				
Time Stop:	1545				
Total Minutes:	525				
% Time On:	100				
Total Volume (liters):	754				
Laboratory:	RESERVOIRS				
Analytical Method:	AA FLAME				
Date/Time Results Recieved:	12-14-95 1h:30				
Fibers/Field:	NA				
Analytical Results:	Zn @ 21 μg/m3				
Comments:	Zn PEL = 5 mg/m3		— all others (Pb, As, Cd) BDL		

Signature: Max Roberts Date: 12 / 18 / 95

* R = Restricted/Containment Area Sample P = Personal Sample F = Free/Ambient Sample
** B = Before/Pre Ambient P = During Pre-Cleaning/Prep D = During Removal/Abatement C = During Cleaning/Decontamination F = Final/Post Abatement

(SKETCH/DIAGRAM SAMPLE LOCATIONS ON BACK)

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1898
AIHA Certificate of Accreditation #460 LAB ID 10768

TABLE IV. ZINC IN AIR ANALYSIS

RES Job Number:	RES 32366-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	December 19, 1995
Analysis Type:	Zinc by Flame AA, NIOSH 7030
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Zinc (ug)	Detection Limit (ug/m3)	ZINC CONCENTRATION (ug/m3)
ROBCO121895-01	EM	214284	754	1.6	0.3	2.1
ROBCO121895-02	EM	214285	0	BDL	---	---

BDL = Below Detection Limit
Detection Limit = 0.2 ug

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE III. CADMIUM IN AIR ANALYSIS

RES Job Number:	RES 32368-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROSCO
Date Samples Received:	December 18, 1995
Analysis Type:	Cadmium by Flame AA
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Cadmium (ug)	Detection Limit (ug/m3)	CADMIUM CONCENTRATION (ug/m3)
ROSCO121895-01	EM	214284	754	BDL	0.7	BDL
ROSCO121895-02	EM	214285	0	BDL	---	---

BDL = Below Detection Limit
Detection Limit = 0.5 ug

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE II. ARSENIC IN AIR ANALYSIS

RES Job Number:	**RES 32366-1**
Client:	**Evergreen Environmental Consulting Co.**
Client Project:	**ROBCO**
Date Samples Received:	**December 18, 1995**
Analysis Type:	**Arsenic by Furnace AA**
Turnaround:	**24 Hour**

Client ID Number		Lab ID Number	Air Volume (L)	Arsenic (ug)	Detection Limit (ug/m3)	ARSENIC CONCENTRATION (ug/m3)
ROBCO121895-01	EM	214284	754	BDL	0.07	BDL
ROBCO121895-02	EM	214285	0	BDL	---	---

BDL = Below Detection Limit
Detection Limit = 0.05 ug

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE I. LEAD IN AIR ANALYSIS

RES Job Number:	RES 32366-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	December 18, 1995
Analysis Type:	Lead by Flame AA, NIOSH 7082
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Lead (ug)	Detection Limit (ug/m3)	LEAD CONCENTRATION (ug/m3)
ROBCO121895-01	EM	214284	764	BDL	3.3	BDL
ROBCO121895-02	EM	214285	0	BDL	---	---

BDL = Below Detection Limit
Detection Limit = 2.5 ug

DATA QA

EVERGREEN ENVIRONMENTAL CONSULTING CO.

revised 5/95

LEAD AIR MONITORING FIELD WORKSHEET

Page ___ of ___

Project: ROBCO Phase/Location: Phase II Date: 12/27/95 Day: Wedn.

Temperature	Wind Speed & Direction	Barometric Pressure	Weather Conditions
___ a.m./p.m.	___ a.m./p.m.	___ a.m./p.m.	

ROBCO122795 Pb, Cd, As, Zn

Sample #:	#01	#02
Pump #:	L-07	BLANK
Media:	37mm 0.8μ MCE	
Description of Work in Progress:	Grade Checker	
Area/Personnel*:	P	
Abatement Status**:	D	
Location/Description or Worker:	DON CHILES	
Protective Equipment:	LEVEL D	
Calibration Pre:	1.750	
Calibration Post:	1.750	
Avg/Mean Flow Rate:	1.750	
Relative % Difference:	<25%	
Time Start:	0710	
Time Stop:	1540	
Total Minutes:	510	
% Time On:	100	
Total Volume (liters):	892	
Laboratory:	Reservoirs	
Analytical Method:	AA FLAME	
Date/Time Results Recieved:	12-29-95 11:00	
Fibers/Field:		
Analytical Results:	↓	
Comments:	Zn = 3.3 μg/m³ Cd = BDL As = 0.08 μg/m³ Pb = BDL	

Signature: Matt Rotunda Date: 12/28/95

* R = Restricted/Containment Area Sample P = Personal Sample F = Free/Ambient Sample
** B= Before/Pre Ambient P = During Pre-Cleaning/Prep D = During Removal/Abatement C = During Cleaning/Decontamination F = Final/Post Abatement

(SKETCH/DIAGRAM SAMPLE LOCATIONS ON BACK)

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1886
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE I. LEAD IN AIR ANALYSIS

RES Job Number:	RES 32553-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	December 27, 1995
Analysis Type:	Lead by Flame AA, NIOSH 7082
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Lead (mg)	Detection Limit (mg/m3)	LEAD CONCENTRATION (mg/m3)
ROBCO-122795-#01	EM	215281	892	BDL	0.003	BDL
ROBCO-122795-#02	EM	215282	0	BDL	---	---

BDL = Below Detection Limit
Detection Limit = 0.0025 mg

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE II. ARSENIC IN AIR ANALYSIS

RES Job Number:	RES 32553-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	December 27, 1995
Analysis Type:	Arsenic by Furnace AA, NIOSH 7901M
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Arsenic (mg)	Detection Limit (mg/m3)	ARSENIC CONCENTRATION (mg/m3)
ROBCO-122795-#01	EM	215281	892	0.00002	0.00001	0.00003
ROBCO-122795-#02	EM	215282	0	0.00001	---	---

≈ 0.03 µg/m³

BDL = Below Detection Limit
Detection Limit = 0.00001 mg

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE III. CADMIUM IN AIR ANALYSIS

RES Job Number:	RES 32553-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	December 27, 1995
Analysis Type:	Cadmium by Flame AA, NIOSH 7048
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Cadmium (mg)	Detection Limit (mg/m3)	CADMIUM CONCENTRATION (mg/m3)
ROBCO-122795-#01	EM	215281	892	BDL	0.0006	BDL
ROBCO-122795-#02	EM	215282	0	BDL	---	---

BDL = Below Detection Limit
Detection Limit = 0.0005 mg

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1898
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE IV. ZINC IN AIR ANALYSIS

RES Job Number:	**RES 32563-1**
Client:	**Evergreen Environmental Consulting Co.**
Client Project:	**ROBCO**
Date Samples Received:	**December 27, 1995**
Analysis Type:	**Zinc by Flame AA. NIOSH 7030**
Turnaround:	**24 Hour**

Client ID Number		Lab ID Number	Air Volume (L)	Zinc (mg)	Detection Limit (mg/m3)	ZINC CONCENTR (mg/m3)
ROBCO-122795-#01	EM	215281	892	0.0029	0.0003	0.0033
ROBCO-122795-#02	EM	215282	0	0.0004	---	---

≈ 3.3 µg

DATA QA

BDL = Below Detection Limit
Detection Limit = 0.00025 mg

EVERGREEN ENVIRONMENTAL CONSULTING CO.

LEAD AIR MONITORING FIELD WORKSHEET

Page ___ of ___

Project: ROBCO Phase/Location: II Date: 1/4/96 Day: Thurs

Temperature	Wind Speed & Direction	Barometric Pressure	Weather Conditions
25°F 0715 / 20°F	NW-5 / NW-10-15	___ / ___	Partly Cloudy
a.m./p.m.	a.m./p.m.	a.m./p.m.	

AROBCA010496-

Sample #:	-01	-02			
Pump #:	L-12	Blank			
Media:	S				
Description of Work in Progress:	Concrete Slab Demolition				
Area/Personnel*:	P				
Abatement Status**:	D				
Location/Description or Worker:	Grade Checker Myron Saylor				
Protective Equipment:	Level D				
Calibration Pre:	1.79				
Calibration Post:	1.74				
Avg/Mean Flow Rate:	1.77				
Relative % Difference:					
Time Start:	0810				
Time Stop:	1532				
Total Minutes:	309 (Time on Pump)				
% Time On:	100%				
Total Volume (liters):	5.47				
Laboratory:	Reservoirs				
Analytical Method:	AA Flame				
Date/Time Results Recieved:	1/5/96				
Fibers/Field:	NA				
Analytical Results:	Cd = BLD Pb = BLD				
Comments:	As = 0.00006 mg/m3 Zn = 0.0031 mg/m3				

Signature: [signature] Date: 1/4/96

* R = Restricted/Containment Area Sample P = Personal Sample F = Free/Ambient Sample

** B= Before/Pre Ambient P = During Pre-Cleaning/Prep D = During Removal/Abatement C = During Cleaning/Decontamination F = Final/Post Abatement

(SKETCH/DIAGRAM SAMPLE LOCATIONS ON BACK)

1 mg / 1000 µg

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE I. LEAD IN AIR ANALYSIS

RES Job Number:	RES 32714-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	January 04, 1996
Analysis Type:	Lead by Flame AA, NIOSH 7082
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Lead (mg)	Detection Limit (mg/m3)	LEAD CONCENTRATION (mg/m3)
AROBC0010496-1	EM	216308	547	BDL	0.005	BDL
AROBC0010496-2	EM	216309	0	BDL	---	---

BDL = Below Detection Limit
Detection Limit = 0.0025 mg

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE II. CADMIUM IN AIR ANALYSIS

RES Job Number:	RES 32714-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	January 04, 1996
Analysis Type:	Cadmium by Flame AA, NIOSH 7048
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Cadmium (mg)	Detection Limit (mg/m3)	CADMIUM CONCENTRATION (mg/m3)
AROBCO010496-1	EM	216308	547	BDL	0.0009	BDL
AROBCO010496-2	EM	216309	0	BDL	---	---

DATA QA

BDL = Below Detection Limit
Detection Limit = 0.0005 mg

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE III. ARSENIC IN AIR ANALYSIS

RES Job Number:	RES 32714-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	January 04, 1996
Analysis Type:	Arsenic by Furnace AA, NIOSH 7901M
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Arsenic (mg)	Detection Limit (mg/m3)	ARSENIC CONCENTRATION (mg/m3)
AROBCO010496-1	EM	216308	547	0.00003	0.00002	0.00006
AROBCO010496-2	EM	216309	0	BDL	—	—

BDL = Below Detection Limit
Detection Limit = 0.00001 mg

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE IV. ZINC IN AIR ANALYSIS

RES Job Number:	RES 32714-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	January 04, 1996
Analysis Type:	Zinc by Flame AA, NIOSH 7030
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Zinc (mg)	Detection Limit (mg/m3)	ZINC CONCENTR (mg/m3)
AROBCO010496-1	EM	216308	547	0.0017	0.0005	0.0031
AROBCO010496-2	EM	216309	0	0.0001	—	—

BDL = Below Detection Limit
Detection Limit = 0.00025 mg

DATA QA

EVERGREEN ENVIRONMENTAL CONSULTING CO.

LEAD AIR MONITORING FIELD WORKSHEET

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Project: ROBCO Phase/Location: II Date: 1/8/96 Day: Mon

Temperature	Wind Speed & Direction	Barometric Pressure	Weather Conditions
45°F / 60°F a.m./p.m.	Calm / NW 5 mph a.m./p.m.	/ a.m./p.m.	Clear

AR08P00108 96-

Sample #:	-01	-02			
Pump #:	L-7	Blank			
Media:	37mm 0.8 µm MCE				
Description of Work in Progress:	Concrete Slab Demolition				
Area/Personnel*:	P				
Abatement Status**:	D				
Location/Description or Worker:	Track Hoe Operator Randy Miller				
Protective Equipment:	Level D				
Calibration Pre:	1.82				
Calibration Post:	1.87				
Avg/Mean Flow Rate:	1.85				
Relative % Difference:					
Time Start:	8:30 am				
Time Stop:	4:00 pm				
Total Minutes:	450				
% Time On:	100 %				
Total Volume (liters):	833				
Laboratory:	Rosanalysts				
Analytical Method:	AA Flame				
Date/Time Results Recieved:	1/8/96				
Fibers/Field:					
Analytical Results:	Pb + Cd = BDL Zn = 0.0017 mg/m³				
Comments:	As = 0.00004 mg/m³				

Signature: _____ Date: 1/8/96

* R = Restricted/Containment Area Sample P = Personal Sample F = Final/Ambient Sample
** B= Before/Pre Ambient P = During Pre-Cleaning/Prep D = During Removal/Abatement C = During Cleaning/Decontamination F = Final/Post Abatement

(SKETCH/DIAGRAM SAMPLE LOCATIONS ON BACK)

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1886
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE III. ZINC IN AIR ANALYSIS

RES Job Number: RES 32773-1
Client: Evergreen Environmental Consulting Co.
Client Project: ROBCO
Date Samples Received: January 08, 1996
Analysis Type: Zinc by Flame AA, NIOSH 7030
Turnaround: 24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Zinc (mg)	Detection Limit (mg/m3)	ZINC CONCENTR (mg/m3)
AROBCO010896-01	EM	216563	833	0.0014	0.0003	0.0017
AROBCO010896-02	EM	216564	0	0.0003	----	----

BDL = Below Detection Limit
Detection Limit = 0.00025 mg

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1898
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE IV. ARSENIC IN AIR ANALYSIS

RES Job Number: RES 32773-1
Client: Evergreen Environmental Consulting Co.
Client Project: ROSCO
Date Samples Received: January 08, 1996
Analysis Type: Arsenic by Furnace AA, NIOSH 7901M
Turnaround: 24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Arsenic (mg)	Detection Limit (mg/m3)	ARSENIC CONCENTRATION (mg/m3)
AROSCO010896-01	EM	216563	833	0.00004	0.00001	0.00004
AROSCO010896-02	EM	216564	0	BDL	—	—

DATA QA

BDL = Below Detection Limit
Detection Limit = 0.00001 mg

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE II. CADMIUM IN AIR ANALYSIS

RES Job Number: RES 32773-1
Client: Evergreen Environmental Consulting Co.
Client Project: ROSCO
Date Samples Received: January 08, 1996
Analysis Type: Cadmium by Flame AA, NIOSH 7048
Turnaround: 24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Cadmium (mg)	Detection Limit (mg/m3)	CADMIUM CONCENTRATION (mg/m3)
AROSCO010896-01	EM	216563	833	BDL	0.0006	BDL
AROSCO010896-02	EM	216564	0	BDL	---	---

BDL = Below Detection Limit
Detection Limit = 0.0005 mg

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1696
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE I. LEAD IN AIR ANALYSIS

RES Job Number:	RES 32773-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROSCO
Date Samples Received:	January 08, 1996
Analysis Type:	Lead by Flame AA, NIOSH 7082
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Lead (mg)	Detection Limit (mg/m3)	LEAD CONCENTRATION (mg/m3)
AROSCO010696-01	EM	216563	833	BDL	0.003	BDL
AROSCO010696-02	EM	216564	0	BDL	---	---

BDL = Below Detection Limit
Detection Limit = 0.0025 mg

DATA QA

...LTING CO.

Revised 5/95

LEAD AIR MONITO... FIELD WORKSHEET

Page ___ of ___

Project: ROBCO Phase/Location: Phase II Date: 01/15/96 Day: Mon

Temperature	Wind Speed & Direction	Barometric Pressure	Weather Conditions
35°F; a.m./p.m.	Calm / 5-10 mph Sandfield... a.m./p.m.	/ a.m./p.m.	Partly Cloudy

AROBCO011596-

Sample #:	-01	-02			
Pump #:	#7	Blank			
Media:	37mm 0.8 μ MCE	↓			
Description of Work in Progress:	Concrete Slab Demolition				
Area/Personnel*:	P				
Abatement Status**:	D				
Location/Description of Worker:	~~Grade~~ Checker ~~Dan Chitty~~ Track Hoe Randy Miller				
Protective Equipment:	Level D				
Calibration Pre:	1.87				
Calibration Post:	1.81				
Avg/Mean Flow Rate:	1.84				
Relative % Difference:					
Time Start:	8:08				
Time Stop:	3:40				
Total Minutes:	453				
% Time On:	100%				
Total Volume (liters):	834				
Laboratory:	Reservoirs				
Analytical Method:	AA Flame				
Date/Time Results Recieved:	1/17/96				
Fibers/Field:					
Analytical Results:	Pb, Cd = BDL Zn = 0.0014 ug				
Comments:	As = 0.00019 ug	↓			

Signature: ____________________ Date: ___/___/___

* R = Restricted/Containment Area Sample P = Personal Sample F = Free/Ambient Sample
** B = Before/Pre Ambient P = During Pre-Cleaning/Prep D = During Removal/Abatement C = During Cleaning/Decontamination F = Final/Post Abatement

(SKETCH/DIAGRAM SAMPLE LOCATIONS ON BACK)

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE I. LEAD IN AIR ANALYSIS

RES Job Number: RES 32886-1
Client: Evergreen Environmental Consulting Co.
Client Project: ROBCO
Date Samples Received: January 15, 1996
Analysis Type: Lead by Flame AA, NIOSH 7082
Turnaround: 24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Lead (mg)	Detection Limit (mg/m3)	LEAD CONCENTRATION (mg/m3)
AROBCO011596-01	EM	217162	834	BDL	0.003	BDL
AROBCO011596-02	EM	217163	0	BDL	---	---

DATA QA

BDL = Below Detection Limit
Detection Limit = 0.0025 mg

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE III. CADMIUM IN AIR ANALYSIS

RES Job Number:	RES 32886-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	January 15, 1996
Analysis Type:	Cadmium by Flame AA, NIOSH 7048
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Cadmium (mg)	Detection Limit (mg/m3)	CADMIUM CONCENTRATION (mg/m3)
AROBCO011596-01	EM	217162	834	BDL	0.0006	BDL
AROBCO011596-02	EM	217163	0	BDL	---	---

BDL = Below Detection Limit

Detection Limit = 0.0005 mg

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE II. ZINC IN AIR ANALYSIS

RES Job Number:	RES 32886-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	January 15, 1996
Analysis Type:	Zinc by Flame AA, NIOSH 7030
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Zinc (mg)	Detection Limit (mg/m3)	ZINC CONCENTR (mg/m3)
AROBCO011596-01	EM	217162	834	0.0012	0.0003	0.0014
AROBCO011596-02	EM	217163	0	0.0005	---	---

DATA QA

BDL = Below Detection Limit
Detection Limit = 0.00025 mg

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE I. ARSENIC IN AIR ANALYSIS

RES Job Number:	RES 32886-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	January 15, 1996
Analysis Type:	Arsenic by Furnace AA, NIOSH 7901M
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Arsenic (mg)	Detection Limit (mg/m3)	ARSENIC CONCENTRATION (mg/m3)
AROBCO011596-01	EM	217162	834	0.00016	0.00001	0.00019
AROBCO011596-02	EM	217163	0	BDL	---	---

BDL = Below Detection Limit
Detection Limit = 0.00001 mg

DATA QA

EVERGREEN ENVIRONMENTAL CONSULTING CO.

revised: 5/95

LEAD AIR MONITORING FIELD WORKSHEET

Page ___ of ___

Project: ROBCO Phase/Location: Phase II Date: 01/17/96 Day: Wed

Temperature	Wind Speed & Direction	Barometric Pressure	Weather Conditions
40°F, 20°F a.m./p.m.	Calm, 10-15 mph-SE a.m./p.m.	___ / ___ a.m./p.m.	Partly Cloudy a.m. Snow p.m.

AROBCO011796 –

Sample #:	-01	-02			
Pump #:	12	Blank			
Media:	37 mm 0.8 μ MCE	↓			
Description of Work in Progress:	Excavation				
Area/Personnel* :	A				
Abatement Status** :	D				
Location/Description or Worker:	* Randy Miller Trackhoe Operator				
Protective Equipment:	Level C · ½ face respirators				
Calibration Pre:	1.77				
Calibration Post:	~~1.77~~ 1.65 [illegible]				
Avg/Mean Flow Rate:	1.71				
Relative % Difference:					
Time Start:	0805				
Time Stop:	1559				
Total Minutes:	474				
% Time On:					
Total Volume (liters):	782				
Laboratory:	Reservoir				
Analytical Method:	AA Flame				
Date/Time Results Recieved:	1/19				
~~Filter/field~~:	Pb/Cd – BDL				
Analytical Results:	As = 0.00005 mg/m³ Zn = 0.0018 mg/m³				
Comments:	work today includes excavation of a "Hot spot" – 23% lead	↓			

* Quit before noon Kurt took over

Signature: [signature] Date: 1/17/96

* R = Restricted/Containment Area Sample P = Personal Sample F = Fenceline/Ambient Sample
** B = Before/Pre Abatement F = During Pre-Cleaning/Prep D = During Removal/Abatement C = During Cleaning/Decontamination E = Final/Post Abatement

(SKETCH/DIAGRAM SAMPLE LOCATIONS ON BACK)

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE III. CADMIUM IN AIR ANALYSIS

RES Job Number:	RES 32944-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROSCO
Date Samples Received:	January 17, 1996
Analysis Type:	Cadmium by Flame AA, NIOSH 7048
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Cadmium (mg)	Detection Limit (mg/m3)	CADMIUM CONCENTRATION (mg/m3)
AROSCO011796-01	EM	217404	782	BDL	0.0006	BDL
AROSCO011796-02	EM	217405	0	BDL	----	----

BDL = Below Detection Limit
Detection Limit = 0.0005 mg

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE II. ZINC IN AIR ANALYSIS

RES Job Number:	RES 32944-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROSCO
Date Samples Received:	January 17, 1996
Analysis Type:	Zinc by Flame AA, NIOSH 7030
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Zinc (mg)	Detection Limit (mg/m3)	ZINC CONCENTRATION (mg/m3)
AROSCO011796-01	EM	217404	782	0.0014	0.0003	0.0018
AROSCO011796-02	EM	217405	0	0.0005	----	----

BDL = Below Detection Limit
Detection Limit = 0.00025 mg

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE II. ZINC IN AIR ANALYSIS

RES Job Number:	RES 32944-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROSCO
Date Samples Received:	January 17, 1996
Analysis Type:	Zinc by Flame AA, NIOSH 7030
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Zinc (mg)	Detection Limit (mg/m3)	ZINC CONCENTRATION (mg/m3)
AROSCO011796-01	EM	217404	782	0.0014	0.0003	0.0018
AROSCO011796-02	EM	217405	0	0.0005	----	----

BDL = Below Detection Limit
Detection Limit = 0.00025 mg

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE I. LEAD IN AIR ANALYSIS

RES Job Number:	RES 32944-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	January 17, 1996
Analysis Type:	Lead by Flame AA. NIOSH 7082
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Lead (mg)	Detection Limit (mg/m3)	LEAD CONCENTRATION (mg/m3)
AROBCO011796-01	EM	217404	782	BDL	0.003	BDL
AROBCO011796-02	EM	217405	0	BDL	—	—

RK
DATA QA

BDL = Below Detection Limit
Detection Limit = 0.0025 mg

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE IV. ARSENIC IN AIR ANALYSIS

RES Job Number:	**RES 32944-1**
Client:	**Evergreen Environmental Consulting Co.**
Client Project:	**ROBCO**
Date Samples Received:	**January 17, 1996**
Analysis Type:	**Arsenic by Furnace AA, NIOSH 7901M**
Turnaround:	**24 Hour**

Client ID Number		Lab ID Number	Air Volume (L)	Arsenic (mg)	Detection Limit (mg/m3)	ARSENIC CONCENTRATION (mg/m3)
AROBCO011796-01	EM	217404	782	0.00002	---	0.00003
AROBCO011796-02	EM	217405	0	BDL	---	---

DATA QA

BDL = Below Detection Limit
Detection Limit = 0.00001 mg

EVERGREEN ENVIRONMENTAL CONSULTING CO.

LEAD AIR MONITORING FIELD WORKSHEET

Page ___ of ___

Project: ROBCO Phase/Location: Phase II Date: 01/22/96 Day: Mon

Temperature	Wind Speed & Direction	Barometric Pressure	Weather Conditions
30°F / 10°F a.m./p.m.	1075-S / a.m./p.m.	/ a.m./p.m.	Clear a.m. / Snow

AROBCO012296-

Sample #:	-01	-02			
Pump #:	#7	Blank			
Media:	37mm 0.8µ mixed →				
Description of Work in Progress:	Phase II Excavation				
Area/Personnel*:	A				
Abatement Status**:	D				
Location/Description or Worker:	Track Hoe				
Protective Equipment:					
Calibration Pre:	1.87				
Calibration Post:					
Avg/Mean Flow Rate:					
Relative % Difference:					
Time Start:					
Time Stop:					
Total Minutes:					
% Time On:					
Total Volume (liters):					
Laboratory:	Research				
Analytical Method:	AA Flame				
Date/Time Results Recieved:					
Fibers/Field:					
Analytical Results:					
Comments:	Work stopped early due to weather - Sample not submitted per Harry Mosley				

Signature: [signature] Date: 1/22/96

* R = Residential/Containment Area Sample P = Personal Sample F = Free/Ambient Sample
** B= Before/Pre Abatement D = During Pre-Cleaning/Prep D = During Removal/Abatement C = During Cleaning/Disinfection F = Final/Post Abatement

(SKETCH/DIAGRAM SAMPLE LOCATIONS ON BACK)

EVERGREEN ENVIRONMENTAL CONSULTING CO.

LEAD AIR MONITORING FIELD WORKSHEET

Page ___ of ___

Project: ROBCO Phase/Location: Phase II Date: 01/24/96 Day: Wed.

Temperature	Wind Speed & Direction	Barometric Pressure	Weather Conditions
15°F / 35°F a.m./p.m.	5-10 SE / 10-15 SE a.m./p.m.	/ a.m./p.m.	Partly Cloudy

AROBCO01/24/96-

Sample #:	-01	-02			
Pump #:	L-12	Blank			
Media:	37mm 0.8μ MCE	→			
Description of Work in Progress:	Demolition / Excavation				
Area/Personnel*:	P				
Abatement Stage**:	D				
Location/Description of Worker:	Kevin Gallaher Track Hoe				
Protective Equipment:	Level D				
Calibration Pre:	1.76				
Calibration Post:	1.84				
Avg/Mean Flow Rate:	1.80				
Relative % Difference:					
Time Start:	7.15 a.m.				
Time Stop:	3:20 p.m.				
Total Minutes:	472				
% Time On:	100 %				
Total Volume (liters):	850				
Laboratory:	Elsners				
Analytical Method:	AA Flame				
Date/Time Results Recieved:	1/25/96				
Fibers/Field:					
Analytical Results:	Pb, Cd, As = BLD Cr = 0.0004 mg/m³				
Comments:	Very windy at noon - water truck down - dusty				

Signature: [signature] Date: 1/24/96

* B = Background/Contaminant Area Sample P = Personal Sample F = Final/Post Abatement Sample
** B = Before/Pre Abatement P = During Pre-Cleaning Prep D = During Removal/Abatement C = During Cleaning/Decontamination F = Final/Post Abatement

(SKETCH/DIAGRAM SAMPLE LOCATIONS ON BACK)

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE I. LEAD IN AIR ANALYSIS

RES Job Number: RES 33062-1
Client: Evergreen Environmental Consulting Co.
Client Project: ROBCO
Date Samples Received: January 24, 1996
Analysis Type: Lead by Flame AA, NIOSH 7082
Turnaround: 24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Lead (mg)	Detection Limit (mg/m3)	LEAD CONCENTRATION (mg/m3)
AROBCO012496-01	EM	217997	850	BDL	0.003	BDL
AROBCO012496-02	EM	217998	0	BDL	----	----

BDL = Below Detection Limit
Detection Limit = 0.0025 mg

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1596
AIHA Certificate of Accreditation #480 LAB ID 10788

TABLE II. CADMIUM IN AIR ANALYSIS

RES Job Number: RES 33062-1
Client: Evergreen Environmental Consulting Co.
Client Project: ROBCO
Date Samples Received: January 24, 1996
Analysis Type: Cadmium by Flame AA, NIOSH 7048
Turnaround: 24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Cadmium (mg)	Detection Limit (mg/m3)	CADMIUM CONCENTRATION (mg/m3)
AROBC0012496-01	EM	217997	850	BDL	0.0006	BDL
AROBC0012496-02	EM	217998	0	BDL	---	---

BDL = Below Detection Limit
Detection Limit = 0.0005 mg

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE III. ARSENIC IN AIR ANALYSIS

RES Job Number:	RES 33082-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROSCO
Date Samples Received:	January 24, 1996
Analysis Type:	Arsenic by Furnace AA, NIOSH 7901M
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Arsenic (mg)	Detection Limit (mg/m3)	ARSENIC CONCENTRATION (mg/m3)
AROSCO012496-01	EM	217997	650	BDL	0.00001	BDL
AROSCO012496-02	EM	217998	0	BDL	---	---

BDL = Below Detection Limit
Detection Limit = 0.00001 mg

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1696
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE IV. ZINC IN AIR ANALYSIS

RES Job Number:	**RES 33082-1**
Client:	**Evergreen Environmental Consulting Co.**
Client Project:	**ROBCO**
Date Samples Received:	**January 24, 1996**
Analysis Type:	**Zinc by Flame AA, NIOSH 7030**
Turnaround:	**24 Hour**

Client ID Number		Lab ID Number	Air Volume (L)	Zinc (mg)	Detection Limit (mg/m3)	ZINC CONCENTR (mg/m3)
AROBCO012496-01	EM	217997	850	0.0054	0.0003	0.0064
AROBCO012496-02	EM	217998	0	0.0017	---	---

BDL = Below Detection Limit
Detection Limit = 0.00025 mg

DATA QA

EVERGREEN ENVIRONMENTAL CONSULTING CO.

LEAD AIR MONITORING FIELD WORKSHEET

Page ___ of ___

Project: Roberts Phase/Location: PHASE II Date: 1/30/96 Day: Tuesday

Temperature	Wind Speed & Direction	Barometric Pressure	Weather Conditions
01°F / a.m./p.m.	5 NW / a.m./p.m.	/ a.m./p.m.	Cloudy

ABERR013096

Sample #:	-01	-02			
Pump #:	Fitch L-12	Blank			
Media:	37mm 0.8μ MCE	→			
Description of Work in Progress:	Demolition/ Excavation				
Area/Personnel*:	P				
Abatement Status**:	D				
Location/Description or Worker:	Kevin Gallagher (Truck Hse)				
Protective Equipment:	Level D				
Calibration Pre:	4.75				
Calibration Post:					
Avg/Mean Flow Rate:					
Relative % Difference:					
Time Start:	0710				
Time Stop:					
Total Minutes:					
% Time On:					
Total Volume (liters):	100				
Laboratory:					
Analytical Method:					
Date/Time Results Recieved:					
Fibers/Field:					
Analytical Results:					
Comments:	Void due to physical damage to cassette				

Signature: Don Thelen Date: 1/30/96

* R = Restricted/Containment Area Sample P = Personal Sample F = Front/Ambient Sample
** B= Before/Pre Abatement P = During Pre-Cleaning Prep D = During Removal/Abatement C = During Cleaning/Decontamination F = Final/Post Abatement

(SKETCH/DIAGRAM SAMPLE LOCATIONS ON BACK)

EVERGREEN ENVIRONMENTAL CONSULTING CO.

LEAD AIR MONITORING FIELD WORKSHEET

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Project: Bodcu   Phase/Location: PHASE II   Date: 2/5/96   Day: Mon

Temperature	Wind Speed & Direction	Barometric Pressure	Weather Conditions
41°F / 45°F a.m./p.m.	0-5 / 0-5 a.m./p.m.	— / a.m./p.m.	Clear am / Clear pm

AA0864 020596 -

Sample #:	01	02			
Pump #:	L12				
Media:	37mm .08 μ MCE	→			
Description of Work in Progress:	Excavation	Blank			
Area/Personnel*:	P				
Abatement Status**:	D				
Location/Description or Worker:	Kevin Gallagher (Track Hoe)				
Protective Equipment:	D				
Calibration Pre:	1.78				
Calibration Post:	1.84				
Avg/Mean Flow Rate:	1.81				
Relative % Difference:					
Time Start:	0712				
Time Stop:	1533				
Total Minutes:	501				
% Time On:	100				
Total Volume (liters):	907				
Laboratory:	Reservoirs				
Analytical Method:	AA Flame				
Date/Time Results Recieved:					
Fibers/Field:					
Analytical Results:					
Comments:					

Signature: [signature]   Date: 2/5/96

* R = Restricted/Containment Area Sample P = Personal Sample F = Final/Ambient Sample
** B = Before/Pre Abatement P = During Pre-Cleaning/Prep D = During Removal/Abatement C = During Cleanup/Decontamination F = Final/Post Abatement

(SKETCH/DIAGRAM SAMPLE LOCATIONS ON BACK)

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE IV. ARSENIC IN AIR ANALYSIS

RES Job Number:	RES 33267-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	February 05, 1996
Analysis Type:	Arsenic by Furnace AA. NIOSH 7901M
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Arsenic (mg)	Detection Limit (mg/m3)	ARSENIC CONCENTRATION (mg/m3)
AROBCO020596-01	EM	219215	907	0.00010	0.00001	0.00011
AROBCO020596-02	EM	219216	0	BDL	—	—

DATA QA

BDL = Below Detection Limit
Detection Limit = 0.00001 mg

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896

AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE III. ZINC IN AIR ANALYSIS

RES Job Number:	RES 33267-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	February 05, 1996
Analysis Type:	Zinc by Flame AA, NIOSH 7030
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Zinc (mg)	Detection Limit (mg/m3)	ZINC CONCENTR (mg/m3)
AROBCO020596-01	EM	219215	907	0.0038	0.0003	0.0042
AROBCO020596-02	EM	219216	0	0.0008	----	----

DATA QA

BDL = Below Detection Limit
Detection Limit = 0.00025 mg

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1596
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE II. CADMIUM IN AIR ANALYSIS

RES Job Number:	RES 33257-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	February 05, 1996
Analysis Type:	Cadmium by Flame AA, NIOSH 7048
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Cadmium (mg)	Detection Limit (mg/m3)	CADMIUM CONCENTRATION (mg/m3)
AROBCO020596-01	EM	219215	907	BDL	0.0006	BDL
AROBCO020596-02	EM	219216	0	BDL	---	---

DATA QA

BDL = Below Detection Limit
Detection Limit = 0.0005 mg

EVERGREEN ENVIRONMENTAL CONSULTING CO.

LEAD AIR MONITORING FIELD WORKSHEET

Page ___ of ___

Project: ROBCO Phase/Location: PHASE II Date: 2/19/96 Day: Mon.

Temperature	Wind Speed & Direction	Barometric Pressure	Weather Conditions
50 / 60 a.m./p.m.	/ a.m./p.m.	/ a.m./p.m.	Partly Sunny

ROBCO021996

Sample #:	#01	#02			
Pump #:	L-05	BLANK			
Media:	37mm 0.8μ MCE	"			
Description of Work in Progress:	325 Excavator	"			
Area/Personnel*:	P				
Abatement Status**:	D				
Location/Description or Worker:	Dan Smith				
Protective Equipment:	Level D				
Calibration Pre:	2.705				
Calibration Post:	2.726				
Avg/Mean Flow Rate:	2.716				
Relative % Difference:	<25%				
Time Start:	0935				
Time Stop:	1705				
Total Minutes:	450				
% Time On:	100				
Total Volume (liters):	1223				
Laboratory:	Reservoirs				
Analytical Method:	AAPL.				
Date/Time Results Recieved:	2-20-96 1700				
Fibers/Field:					
Analytical Results:	Pb = 2.78 μg/m³	✓			
Comments:	Cd = <.0004 μg/m³ Zn = 7.16 μg/m³				

As =

Signature: Matt [signature] Date: 2/20/96

* R = Restricted/Containment Area Sample P = Personal Sample F = Final/Ambient Sample
** B = Before/Pre Abatement P = During Pre-Cleaning/Prep D = During Removal/Abatement C = During Cleaning/Decontamination F = Final/Post Abatement

(SKETCH/DIAGRAM SAMPLE LOCATIONS ON BACK)

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1886
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE I. LEAD IN AIR ANALYSIS

RES Job Number:	RES 33542-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	February 19, 1996
Analysis Type:	Lead by Flame AA, NIOSH 7082
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Lead (ug)	Detection Limit (ug/m3)	LEAD CONCENTRATION (ug/m3)
A-ROBCO21996-01	EM	220950	1223	3.40	2.04	2.78
A-ROBCO21996-02	EM	220951	0	BDL	---	---

DATA QA

BDL = Below Detection Limit
Detection Limit = 2.5 ug

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE II. CADMIUM IN AIR ANALYSIS

RES Job Number:	RES 33542-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	February 19, 1996
Analysis Type:	Cadmium by Flame AA, NIOSH 7048
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Cadmium (mg)	Detection Limit (mg/m3)	CADMIUM CONCENTRATION (mg/m3)
A-ROBCO21996-01	EM	220950	1223	BDL	0.0004	BDL
A-ROBCO21996-02	EM	220951	0	BDL	—	—

BDL = Below Detection Limit
Detection Limit = 0.0005 mg

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE III. ZINC IN AIR ANALYSIS

RES Job Number:	RES 33642-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	February 19, 1996
Analysis Type:	Zinc by Flame AA, NIOSH 7030
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Zinc (ug)	Detection Limit (ug/m3)	[redacted] CONCENT (ug/m3)
A-ROBCO21996-01	EM	220950	1223	9.3	1.6	7.6
A-ROBCO21996-02	EM	220951	0	BDL	---	---

ZINC

BDL = Below Detection Limit
Detection Limit = 2 ug

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1886
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE I. ARSENIC IN AIR ANALYSIS

RES Job Number:	RES 33542-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROBCO
Date Samples Received:	February 19, 1996
Analysis Type:	Arsenic by Furnace AA, NIOSH 7901M
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Arsenic (ug)	Detection Limit (ug/m3)	ARSENIC CONCENTRATION (ug/m3)
A-ROBCO21996-01	EM	220950	1223	BDL	8.18	BDL
A-ROBCO21996-02	EM	220951	0	BDL	---	---

BDL = Below Detection Limit
Detection Limit = 10 ug

DATA QA

ARSENIC FROM 2-19-96

EVERGREEN ENVIRONMENTAL CONSULTING CO.

LEAD AIR MONITORING FIELD WORKSHEET

Page ___ of ___

Project: RoBCO Phase/Location: PHASE II Date: 2/12/96 Day: ______

Temperature	Wind Speed & Direction	Barometric Pressure	Weather Conditions
___/___ a.m./p.m.	___/___ a.m./p.m.	___/___ a.m./p.m.	______

ARBCO 021296 – FEB 12, 1996

Sample #:	01	02			
Pump #:	411				
Media:	37mm 0.8µMCE	→			
Description of Work in Progress:	Excavation	Blank			
Area/Personnel*:	P	↓			
Abatement Status**:	D	↓			
Location/Description or Worker	Kevin Gallagher (Track hoe)	↓			
Protective Equipment:	D	↓			
Calibration Pre:	1.77	↓			
Calibration Post:	1.84	↓			
Avg/Mean Flow Rate:	1.80	↓			
Relative % Difference:		↓			
Time Start:	0659	↓			
Time Stop:	1535	↓			
Total Minutes:	249 *	↓			
% Time On:		↓			
Total Volume (liters):	448	↓			
Laboratory:	Reservoirs				
Analytical Method:	Flame AA				
Date/Time Results Recieved,					
Fibers/Field:					
Analytical Results:					
Comments:	* Time on pump - pump stopped				

Signature: [signature] Date: 2/12/96

* R = Area/Ambient/Containment Area Sample P = Personal Sample F = Final/Ambient Sample
** B = Before/Pre Abatement P = During Pre-Cleaning/Prep D = During Removal/Abatement C = During Cleaning/Decontamination E = Final/Post Abatement

(SKETCH/DIAGRAM SAMPLE LOCATIONS ON BACK)

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1696
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE III. ZINC IN AIR ANALYSIS

RES Job Number: RES 33423-1
Client: Evergreen Environmental Consulting Co.
Client Project: ROSCO
Date Samples Received: February 13, 1996
Analysis Type: Zinc by Flame AA, NIOSH 7030
Turnaround: 24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Zinc (mg)	Detection Limit (mg/m3)	ZINC CONCENTR (mg/m3)
AROSCO021296-01	EM	219995	448	0.0038	0.0006	0.0080
AROSCO021296-02	EM	219996	0	0.0037	—	—

DATA QA

BDL = Below Detection Limit
Detection Limit = 0.00025 mg

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE I. LEAD IN AIR ANALYSIS

RES Job Number:	RES 33423-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROSCO
Date Samples Received:	February 13, 1996
Analysis Type:	Lead by Flame AA, NIOSH 7082
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Lead (ug)	Detection Limit (ug/m3)	LEAD CONCENTRATION (ug/m3)
AROBCO021296-01	EM	219995	448	BDL	5.58	BDL
AROBCO021296-02	EM	219996	0	BDL	---	---

RK
DATA QA

BDL = Below Detection Limit
Detection Limit = 2.5 ug

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1896
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE II. CADMIUM IN AIR ANALYSIS

RES Job Number: RES 33423-1
Client: Evergreen Environmental Consulting Co.
Client Project: AROBCO
Date Samples Received: February 13, 1996
Analysis Type: Cadmium by Flame AA, NIOSH 7048
Turnaround: 24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Cadmium (mg)	Detection Limit (mg/m3)	CADMIUM CONCENTRATION (mg/m3)
AROBCO021296-01	EM	219995	448	BDL	0.0011	BDL
AROBCO021296-02	EM	219996	0	BDL	---	---

BDL = Below Detection Limit
Detection Limit = 0.0005 mg

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1696
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE IV. ARSENIC IN AIR ANALYSIS

RES Job Number: RES 33423-1
Client: Evergreen Environmental Consulting Co.
Client Project: ROBCO
Date Samples Received: February 13, 1996
Analysis Type: Arsenic by Furnace AA, NIOSH 7901M
Turnaround: 24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Arsenic (mg)	Detection Limit (mg/m3)	ARSENIC CONCENTRATION (mg/m3)
AROBCO021296-01	EM	219995	448	0.00009	0.00002	0.00019
AROBCO021296-02	EM	219996	0	BDL	---	---

BDL = Below Detection Limit
Detection Limit = 0.00001 mg

DATA QA

EVERGREEN ENVIRONMENTAL CONSULTING CO.

LEAD AIR MONITORING FIELD WORKSHEET

Page ___ of ___

Project: ROBCO Phase/Licence: PHASE II Date: 2/27/96 Day: TUES

Temperature	Wind Speed & Direction	Barometric Pressure	Weather Conditions
___/___ a.m./p.m.	___/___ a.m./p.m.	___/___ a.m./p.m.	___

A-ROBCO-22696-

Sample #:	01				
Pump #:					
Media:	37mm 0.8µ MCE				
Description of Work in Progress:	FINAL GRADING				
Area/Personnel*:	P				
Abatement Status**:	D				
Location/Description or Worker:	KEVIN GALLAGHER -325 EXCAVATOR				
Protective Equipment:	LEVEL D				
Calibration Pre:	2.610				
Calibration Post:	2.305				
Avg/Mean Flow Rate:	2.46				
Relative % Difference:					
Time Start:	0700				
Time Stop:	1630				
Total Minutes:	570				
% Time On:	100				
Total Volume (liters):	1401				
Laboratory:	RESERVOIRS				
Analytical Method:	FLAME AA				
Date/Time Results Recieved:	↓				
Fibers/Field:					
Analytical Results:					
Comments:	ALL BELOW AL				

Signature: _____ Date: ___/___/___

* R = Restricted/Containment Area Sample P = Personal Sample F = Perm/Ambient Sample
** B = Before/Pre Abatement F = During Pre/Cleaning/Prep D = During Removal/Abatement C = During Cleaning/Decontamination F = Final/Post Abatement

(SKETCH/DIAGRAM SAMPLE LOCATIONS ON BACK)

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1596
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE IV. ZINC IN AIR ANALYSIS

RES Job Number: RES 35712-1
Client: Evergreen Environmental Consulting Co.
Client Project: ROBCO Phase II
Date Samples Received: February 28, 1996
Analysis Type: Zinc by Flame AA, NIOSH 7030
Turnaround: 24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Zinc (ug)	Detection Limit (ug/m3)	ZINC CONCENTRATION (ug/m3)
A-ROBCO-22796-01	EM	221959	1401	2.2	0.4	1.6

BDL = Below Detection Limit
Detection Limit = 0.5 ug

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1586
AIHA Certificate of Accreditation #480 LAB ID 10748

TABLE III. CADMIUM IN AIR ANALYSIS

RES Job Number: RES 33712-1
Client: Evergreen Environmental Consulting Co.
Client Project: ROBCO Phase II
Date Samples Received: February 28, 1996
Analysis Type: Cadmium by Flame AA, NIOSH 7048
Turnaround: 24 Hour

Client ID Number	Lab ID Number	Air Volume (L)	Cadmium (ug)	Detection Limit (ug/m3)	CADMIUM CONCENTRATION (ug/m3)
A-ROBCO-22796-01 EM	221959	1401	BDL	0.36	BDL

BDL = Below Detection Limit
Detection Limit = 0.6 ug

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1996
AIHA Certificate of Accreditation #480 LAB ID 10768

TABLE II. ARSENIC IN AIR ANALYSIS

RES Job Number:	RES 35712-1
Client:	Evergreen Environmental Consulting Co.
Client Project:	ROSCO Phase II
Date Samples Received:	February 28, 1996
Analysis Type:	Arsenic by Furnace AA, NIOSH 7901M
Turnaround:	24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Arsenic (ug)	Detection Limit (ug/m3)	ARSENIC CONCENTRATION (ug/m3)
A-ROSCO-22756-01	BW	221959	1401	BDL	7.14	BDL

BDL = Below Detection Limit
Detection Limit = 10 ug

DATA QA

RESERVOIRS ENVIRONMENTAL SERVICES, INC.

NVLAP Accredited Laboratory #1696
AIHA Certificate of Accreditation #480 LAB ID 10766

TABLE I. LEAD IN AIR ANALYSIS

RES Job Number: RES 33712-1
Client: Evergreen Environmental Consulting Co.
Client Project: ROSCO Phase II
Date Samples Received: February 28, 1996
Analysis Type: Lead by Flame AA, NIOSH 7082
Turnaround: 24 Hour

Client ID Number		Lab ID Number	Air Volume (L)	Lead (ug)	Detection Limit (ug/m3)	LEAD CONCENTRATION (ug/m3)
A-ROSCO-22796-01	EM	221859	1401	BDL	1.78	BDL

BDL = Below Detection Limit
Detection Limit = 2.5 ug

DATA QA

APPENDIX IV
Waste Manifests

Emergency Contact Telephone Number

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. C·O·D·9·8·0·7·1·6·9·5·5 | Manifest Document No. 6·1·6·3·6 | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address U.S. EPA
500 SOUTH SANTA FE DRIVE
DENVER, CO 80223
4. Generator's Phone (303) 292-1850

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: OIL AND SOLVENT PROCESS CO.
6. US EPA ID Number: C·O·D·9·8·0·5·9·1·1·8·4
C. State Transporter's ID
D. Transporter's Phone (303) 289-4827

7. Transporter 2 Company Name
8. US EPA ID Number
E. State Transporter's ID
F. Transporter's Phone

9. Designated Facility Name and Site Address: CHEMICAL WASTE MANAGEMENT, INC.
9131 EAST 96TH AVENUE
HENDERSON CO 80640
10. US EPA ID Number: C·O·D·9·8·0·5·9·1·1·8·4
G. State Facility's ID
H. Facility's Phone (303) 289-4827

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	R.Q., WASTE FLAMMABLE LIQUID, N.O.S., 3, UN1993, II,(D001),(PETROLEUM DISTILLATES) PROFILE #BW7559		6	DM	330	G	D001,D006 D008,F003 F005
b.	NON REGULATED MATERIAL PROFILE #BW7556		3	DM	00000	G	
c.							
d.							

J. Additional Descriptions for Materials Listed Above: B - EMPTY DRUMS - PER KIRKBRIDE

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

24 HOUR EMERGENCY CONTACT (800) 424-9300

TH# 154735 26699

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations. DEN

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; **OR,** if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name: X Rebecca J. Thomas
Signature: X Rebecca J. Thomas
Month Day Year: 10 21 09 6

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: ANNE J. WESTOVER
Signature
Month Day Year: 10 22 96

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name
Signature
Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name: Thomas J Wolf
Signature
Month Day Year: 10 23 96

ORIGINAL - RETURN TO GENERATOR

WMX TECHNOLOGIES, INC. DIRECTORS AND OFFICERS

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Professor, University of Chicago The School of Social Service Administration

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Rust International

Rodney C. Gilbert
President & Chief Executive Officer

Waste Management International

Edwin G. Falkman
Chief Executive

2/21

OSCO DENVER TRANSPORTATION
9131 E. 96th Avenue
Henderson, CO 80640-8426

Trip Ticket: 000154733 RUN: 0044158 PAGE:
Requested by: WM0179SML
Requested On: 01/31/96

Driver (1): ,
Driver (2): _____ Load/Unload:
Equipment: CWNT 147001 Straight Truck and Pick-up

Generator Information:	Manifest Document Number(s) 16056
US EPA ID No. COD980716955	
US EPA	State EPA ID No. NO STATE EPA
500 S SANTA FE DR	
DENVER, CO 80223-2402	Phone: (303) 293-1850
Pickup: 02/12/96 09:00	
24 HR EMERGENCY AND SPILL ASSISTANCE NUMBERS:	( ) -

Transporter Information:	US EPA ID No.	COD980591184
OSCO DENVER TRANSPORTATION		
9131 E. 96th Avenue	State EPA ID No.	
Henderson, CO 80640-8426		
	Phone:	(303) 289-4827

Designated Facility Information	US EPA ID No.	COD980591184
CHEMICAL WASTE MGMT INC		
9131 E 96TH AVE	State EPA ID No.	NO STATE EPA
HENDERSON, CO 80640-8426		
DISP: 02/12/96 08:00 SC: CSTD	Phone:	(303) 289-4827

US DOT Information: Service Request No.: 0277908 Activity No. 0001
Master Service Request No.: 0000000 UN/NA: UN1993 Pkg Grp: II
PROFILE 8W7559 PETROLEUM DISTILLATES Hazard class: 3 HM: Y
DOT Proper Shipping Name: P.O.#: _____
RQ, WASTE FLAMMABLE LIQUID, N.O.S. (D001)
Customer Contact: HARRY MOSELEY (303) 98[illegible]-5146 EXT: 0000

Containers No.	Type	Total Quantity	UOM	DESCRIPTION	Waste Codes
0006	DM	0			D001 D006 D008 F003
		(Shipped)			F003

US DOT Information: Service Request No.: 0277908 Activity No. 0002
Master Service Request No.: 0000004 UN/NA: Pkg Grp:
PROFILE 8W7556 RCRA EMPTY DRUMS Hazard class: 00 HM: N
DOT Proper Shipping Name: P.O.#: _____
NON-REGULATED MATERIAL
Customer Contact: HARRY MOSELEY (303) 98[illegible]-5146 EXT: 0000

Containers No.	Type	Total Quantity	UOM	DESCRIPTION	Waste Codes
0003	DM	0			
		(Shipped)			

SCO DENVER TRANSPORTATION
131 E. 96th Avenue
Henderson, CO 80640-8426

Trip Ticket: 000154735 RUN: 0044158 PAGE: 2
Requested by: WM0179SMC
Requested On: 01/31/96

LOADING DEMURRAGE

DEPART DATE/TIME _____

Time Summary	
Start	_____
End	_____
Total	_____

ARRIVAL DATE/TIME _____

ADDITIONAL CUSTOMER/SITE

Requirements	
Box In #	_____
Box Out #	_____
Wash	Yes / No
Bring Liner	0/1/2/3

UNLOADING DEMURRAGE

DEPART DATE/TIME _____

Time Summary	
Start	_____
End	_____
Total	_____

ARRIVAL DATE/TIME _____

LOAD/UNLOAD COMMENTS _____

ADDITIONAL COMMENTS/REMARKS: _____

Shipper Signature — Date 2-22-96

Transportation Signature — Date 2/22/96

Receiving Signature — Date

Emergency Contact Telephone Number

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. CO D 9 8 0 7 1 8 9 5 5 | Manifest Document No. 0 1 8 3 8 | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
U.S. EPA
500 SOUTH SANTA FE DRIVE
DENVER, CO 80223
4. Generator's Phone (303) 293-1350

A. State Manifest Document Number
B. State Generator's ID

5. Transporter 1 Company Name: OIL AND SOLVENT PROCESS CO. | 6. US EPA ID Number | C. State Transporter's ID | D. Transporter's Phone (303) 289-4827

7. Transporter 2 Company Name | 8. US EPA ID Number | E. State Transporter's ID | F. Transporter's Phone

9. Designated Facility Name and Site Address
CHEMICAL WASTE MANAGEMENT, INC.
9131 EAST 96TH AVENUE
HENDERSON, CO 80640
10. US EPA ID Number | G. State Facility's ID | H. Facility's Phone (303) 289-4827

11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. R.Q., WASTE FLAMMABLE LIQUID, N.O.S., 3, UN1993, II, (D001), (PETROLEUM DISTILLATES) PROFILE #EW7559		6	DM	330	G EN	D001, D006 D008, F003 F005
b. NON REGULATED MATERIAL PROFILE #EW7556		#3	DM	00000	G	
c.						
d.						

J. Additional Descriptions for Materials Listed Above
3- EMPTY DRUMS - P&R KINKEDOVER

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
24 HOUR EMERGENCY CONTACT (800) 424-9300
TE# 15735

16. **GENERATOR'S CERTIFICATION:** I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations. LEN

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; **OR,** if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month	Day	Year
Rebecca J. Thomas	Rebecca J. Thomas	1	2	06

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year
[illegible]	[illegible]	1	12	06

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month	Day	Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month	Day	Year

GENERATOR'S COPY

LAND DISPOSAL NOTIFICATION AND CERTIFICATION FORM

Generator Name: U.S. EPA Manifest Doc. No.: 0 1 5 0 3

CWM Profile Number: B W 7 5 5 9 State Manifest No.:

1. Is this waste a non-wastewater or a wastewater? (See 40 CFR 268.2) Check ONE: ☒ Non-Wastewater ☐ Wastewater
2. If this waste is subject to any California List restrictions enter the letter from below (either A, B1, or B2) next to each restriction that is applicable: _____ HOCs, _____ PCBs _____ Acid. _____ Metals. _____ Cyanides.
3. Identify ALL USEPA hazardous waste codes that apply to this waste shipment, as defined by 40 CFR 261. For each waste code, identify the corresponding subdivision, or check NONE if the waste code has no subdivision. Also check which treatment standards apply. Spent solvent and California List treatment standards are listed on the back of this form. If F039, multi-source leachate applies, those standards must be attached by the generator. If the specified treatment technology of "Deactivation, and meet F039" is identified for D001 and D002, the underlying hazardous constituent standard(s) must also be attached.

REF #	4. US EPA HAZARDOUS WASTE CODE(S)	5. SUBDIVISION ENTER THE SUBDIVISION DESCRIPTION IF NOT APPLICABLE SIMPLY CHECK NONE		6. APPLICABLE TREATMENT STANDARDS			7. HOW MUST THE WASTE BE MANAGED? ENTER THE LETTER FROM BELOW
				6.a - PERFORMANCE - BASED: CHECK AS APPLICABLE		6.b - SPECIFIED TECHNOLOGY: IF APPLICABLE ENTER THE 40 CFR 268.42 - TABLE 1 TREATMENT CODE(S)	
		DESCRIPTION	NONE	268.41(a)	268.43(a)	268.42(a)	
1	D001	ALL DESCRIPTIONS BASED ON 40 CFR 261.21(A) (1) - HIGH TOC IGNITABLE LIQUIDS SUBCATEGORY - GREATER THAN OR EQUAL TO 10% TOTAL ORGANIC CARBON.				INCIN, FSUBS, RORS	A
2							
3							
4	D006		NONE	X			A
5	D008		NONE	X			A
6	F003		NONE		X		A
7	F005		NONE		X		A
8							
9							
10							

To identify F039 or D001, D002 underlying hazardous constituent standards, use the "F039 Underlying Hazardous Constituent Form" provided (CWM-2004) and check here: ☐
To list additional USEPA waste code(s) and subdivision(s), use the supplemental sheet provided (CWM-2001-II) and check here: ☐

HOW MUST THE WASTE BE MANAGED? In column 7 above, enter the letter (A, B1, B2, B3, C, D or E) below that describes how the waste must be managed to comply with the land disposal regulations (40 CFR 268.7). Please understand that if you enter the letter B1, B2, B3, or D, you are making the appropriate certification as provided below.

A. RESTRICTED WASTE REQUIRES TREATMENT

This waste must be treated to the applicable treatment standards set forth in 40 CFR Part 268 Subpart D, 268.32, or RCRA Section 3004(d).
☐ For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."

B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS

"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based upon my inquiry of those individuals immediately responsible for obtaining this information, I believe that the treatment process has been operated and maintained properly so as to comply with the performance levels specified in 40 CFR part 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA Section 3004(d) without impermissible dilution of the prohibited waste. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment."

B.2 RESTRICTED WASTES FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY (AND THE WASTE HAS BEEN TREATED BY THAT TECHNOLOGY)

"I certify under penalty of law that the waste has been treated in accordance with the requirements of 40 CFR 268.42. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

B.3 GOOD FAITH ANALYTICAL CERTIFICATION – FOR INCINERATED ORGANICS

"I certify under penalty of law that I have personally examined and am familiar with the treatment technology and operation of the treatment process used to support this certification and that, based on my inquiry of those individuals immediately responsible for obtaining this information, I believe that the nonwastewater organic constituents have been treated by incineration in units operated in accordance with 40 CFR Part 264 Subpart O or Part 265 Subpart O, or by combustion in fuel substitution units operating in accordance with applicable technical requirements, and I have been unable to detect the nonwastewater organic constituents despite having used best good faith efforts to analyze for such constituents. I am aware that there are significant penalties for submitting a false certification, including the possibility of fine and imprisonment."

C. RESTRICTED WASTE SUBJECT TO A VARIANCE

This waste is subject to a national capacity variance, a treatability variance, or a case-by-case extension. Enter the effective date of prohibition in column 7 above.
☐ For Hazardous Debris: "This hazardous debris is subject to the alternative treatment standards of 40 CFR Part 268.45."

D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT

"I have determined that this waste meets all applicable treatment standards set forth in 40 CFR Part 268 Subpart D, and all applicable prohibition levels set forth in Section 268.32 or RCRA Section 3004(d); and therefore, can be land disposed without further treatment. A copy of all applicable treatment standards and specified treatment methods is maintained at the treatment, storage and disposal facility named above." "I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268 Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting false certification, including the possibility of a fine and imprisonment."

E. WASTE IS NOT CURRENTLY SUBJECT TO PART 268 RESTRICTIONS

This waste is a newly identified waste that is not currently subject to any 40 CFR Part 268 restrictions.

I hereby certify that all information submitted in this and all associated documents is complete and accurate, to the best of my knowledge and information.

Signature Rebecca G. Thomas Title Project Manager Date 2/16/96

CWM-2001A (5/93)

CONFIRMATION LETTER

January 23 , 19 96

HARRY MOSELEY
SPECTRUM SERVICES
1900 WAZEE ST STE 210
DENVER, CO 80202-1259

Re: Confirmation Number 4872350

Attention: HARRY MOSELEY

We are pleased to confirm CWM's approval of your waste material as described below. The attached profile for the waste materials was prepared by CWM based upon information provided by you. It is important that no changes be made to the profile without CWM's consent. If the profile meets with your approval, please call 1-800-843-3604 to schedule shipment of your waste materials.

CWM Profile Number: BW7559 DEN

Approved Mgmt. Facility: O.S.C.O - COLORADO
or another CWM or CWM approved facility

Waste Name: PETROLEUM DISTILLATES

Disposal Method: Supplemental Fuels, Pumpable

Disposal Price: Supplemental Fuels, Pumpable
Liqiud: >10,000 BTU's/lbs.
1 - 3 drums $190/drum
4 - 9 drums $145/drum
10-24 drums $125/drum
25-60 drums $108/drum
60+ drums $100/drum
Liquid: 10 - 8,000 BTU's/lbs.
1 - 3 drums $235/drum
4 - 9 drums $190/drum
10-24 drums $170/drum
25-60 drums $153/drum
60+ drums $125/drum
Liquid: 8 - 6,000 BTU's/lbs.
1 - 3 drums $310/drum
4 - 9 drums $265/drum
10-24 drums $245/drum
25-60 drums $228/drum
60+ drums $140/drum
Liquid Fuels Surcharges
Pricing includes up to 5 gallons of non-pumpable solid residues in drums. Each gallon over 5 gallons will be charged $5/gallon.

January 23, 1996

Re: Confirmation Number 4872350

Transportation Price: $7/drum

Demurrage: $65/hour after first 1 1/2 hours.

Approval Fee
No Charge

Additional Charges

* Rejected loads - $500 return charge plus transportation zone charge for wastes that do not conform to profile.
* Overpack drums handling fee $50/overpack
* Transfer of damaged containers to overpack will be charged $90/drum.
* Empty drum prices listed below:

17E (closed top) $37/drum
17H (open top) $42/drum
17H (overpacks) $100/drum

* Disposal taxes associated with the ultimate disposal of waste will be charged at cost.

Profile Expiration Date: 1/23/98

Applicable state and local taxes are not included in these disposal prices. All wastes are priced as profiled, invoiced as actually received. Invoices shall be paid no later than thirty (30) days from the date of receipt. All terms are governed by the Agreement previously executed between our companies. The prices quoted above are subject to change by CWM upon thirty (30) days' prior written notice to you unless otherwise specifically provided or per the terms of our Agreement. If we have not previously concluded a Service Agreement with your company, one is enclosed for your convenience. Please sign and return it to us as soon as possible. Also, if 'Signature on File' does not appear on the signature line of the Waste Profile Sheet, please sign and return it before scheduling your material.

If you have any questions or would like to make changes to the profile, please contact your representative.
Thank you for this opportunity to be of service.

Chemical Waste Management, Inc.

Chemical Waste Management, Inc.

Date Printed 01/23/96

WASTE PROFILE

Profile # DEN BW7559

(_) Check here if this is a Recertification LOCATION OF ORIGINAL O.S.C.O - COLORADO

GENERAL INFORMATION

1. Generator Name: US EPA Generator USEPA ID: APPL

2. Generator Address: 500 S SANTA FE DR Billing Address: (_) Same SPECTRUM SERVICES
1900 WAZEE ST STE 210
DENVER CO 80223-2402
DENVER CO 80202-1259

3. Technical Contact/Phone: PAUL CASEY 303/292-1850

4. Alternate Contact/Phone: HARRY MOSELEY 303/981-1146 Billing Contact/Phone: HARRY MOSELEY 303/981-1146

PROPERTIES AND COMPOSITION

5. Process Generating Waste: ABANDONED DRUMS

6. Waste Name: PETROLEUM DISTILLATES

7A. Is this a USEPA hazardous waste (40 CFR Part 261)? Yes (X) No (_)

B. Identify ALL USEPA listed and characteristic waste code numbers (D,F,K,P,U): D001 D006 D008 F003 F005

State Waste Codes:

8. Physical State @ 70F: A. Solid(_) Liquid(_) Both(X) Gas(_) B. Single Layer (_) Multilayer (X) C. Free liq. range 50 to 100%

9A. pH: Range 5.0 to 10.0 or Not applicable (_) B. Strong Odor (_);describe

10. Liquid Flash Point: < 73F (_) 73-99F (X) 100-139F (_) 140-199F (_) >= 200F (_) N.A. (_) Closed Cup (X) Open Cup (_)

11. CHEMICAL COMPOSITION: List ALL constituents (incl. halogenated organics) present in any concentration and forward analysis

Constituents	Range		Unit Description
OIL, GREASE, SOLVENTS, PETROLEUM DISTILLATES		to 100	%
		to	
		to	
		to	
		to	
		to	
TOTAL COMPOSITION (MUST EQUAL OR EXCEED 100%):		100.000000	

12. OTHER: PCBs if yes, concentration _ _____ ppm, PCBs regulated by 40 CFR 761 (_). Pyrophoric (_) Explosive (_) Radioactive (_) Benzene if yes, concentration _ _____ ppm. NESHAP (N) Shock Sensitive (_) Oxidizer (_) Carcinogen (_) Infectious (_) Other

13. If waste subject to the land ban & meets treatment standards, check here: _ & supply analytical results where applicable.

SHIPPING INFORMATION

14. PACKAGING: Bulk Solid (_) Bulk Liquid (_) Drum (X) Type/Size: 55 GALLON DRUM Other

15. ANTICIPATED ANNUAL VOLUME: 7 Units: DRUMS Shipping Frequency: ONE TIME

SAMPLING INFORMATION Sample Tracking Number: 4872350

16a. Sample source (drum, lagoon, pond, tank, vat, etc.):

Date Sampled: ' Sampler's Name/Company:

16b. Generator's Agent Supervising Sampling: 17. (_) No sample required (See instructions.)

GENERATOR'S CERTIFICATION

I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste. Any sample submitted is representative as defined in 40 CFR 261 - Appendix I or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I authorize to obtain a sample from any waste shipment for purposes of recertification.

Signature on original profile BW7559

Signature Name and Title Date

Date Printed 01/23/96

Profile #
DEN BW7559

18. This is a Nonwastewater.

19. If this waste is subject to any California list restrictions enter the letter from below (either A, B.1 or B.2) next to each restriction that is applicable:

___ HOCs, ___ PCBs, ___ Acid, ___ Metals, ___ Cyanides

. Identify ALL Characteristic and Listed USEPA hazardous waste numbers that apply (as defined by 40 CFR 261). For each waste number, identify the subcategory (as applicable, check none, or write in the description from 40 CFR 268.41, 268.42, and 268.43).

REF #	A. US EPA HAZARDOUS WASTE CODE(S)	B. SUBCATEGORY Enter the subcategory description. If not applicable, simply check none — DESCRIPTION	B. NONE	C. APPLICABLE TREATMENT STANDARDS — PERFORMANCE-BASED: Check as applicable — 268.41(a)	PERFORMANCE-BASED: Check as applicable — 268.43(a)	SPECIFIED TECHNOLOGY: If applicable enter the 40 CFR 268.42 table 1 treatment code(s) — 268.42	D. HOW MUST THE WASTE BE MANAGED? Enter letter from below
1	D001	IGNITIBLE LIQ, TOC >= 10%				INCIN FSUBS RORGS	A
2	D006		X	X			A
3	D008		X	X			A
4	F003		X	X	X	INCIN	A
5	F005		X	X	X	INCIN	A
6							
7							
8							
9							
10							

Management under the land disposal restrictions:

A. RESTRICTED WASTE REQUIRES TREATMENT

B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS

B.2 RESTRICTED WASTES FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY (AND THE WASTE HAS BEEN TREATED BY THAT TECHNOLOGY)

B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS

C. RESTRICTED WASTE SUBJECT TO A VARIANCE

D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT

E. NOT CURRENTLY SUBJECT TO LAND DISPOSAL RESTRICTIONS

21. Is this waste a soil or debris? No: X Yes, Soil: _ Yes, Debris: _

22. Specific Gravity Range: .750 to 1.100

23. Indicate the range of each: Units

Cyanides: _ None to _____ _____ Type (free, total, amenable, etc.) _____

Cyanides: _ None to _____ _____ Type (free, total, amenable, etc.) _____

Sulfides: _ None to _____ _____ Type _____

Optional
Phenolics: _ None to _____ _____

Identify the waste color VARIES , DOT physical state Liquid ,

and physical appearance LIQUID

Date Printed 01/23/96

Profile #
DEN BW7559

25. COMPLETE ONLY FOR WASTES INTENDED FOR FUELS OR INCINERATION		26. RECLAMATION, FUELS or INCINERATION PARAMETERS (Provide if information is available)
	TOTAL	RANGE
Beryllium as Be	ppm	A. Heat Value (Btu/lb): ____-____
Potassium as K	ppm	B. Water: _____
Sodium as Na	ppm	C. Viscosity (cps): ____@____F _ 100 F _ 150 F
Bromine as Br	%	D. Ash: _____ %
Chlorine as Cl	%	E. Settleable solids: _____ %
Fluorine as F	%	F. Vapor Pressure @ STP (mm/Hg): ____
Sulfur as S	%	G. Is this waste a pumpable liquid? Yes _ No _
		H. Can this waste be heated to improve flow? Yes _ No _
		I. Is this waste soluble in water? Yes _ No _
		J. Particle size: Will the solid portion of this waste pass through a 1/8 inch screen? Yes _ No _

27. TRANSPORTATION INFORMATION

A. Is this a DOT Hazardous Material? Yes X No _

B. Proper Shipping Name. . . . . .: RQ, WASTE FLAMMABLE LIQUID, N.O.S. (D001)

and Additional Description if required: (CONTAINS:)

C. DOT Regulations: United Nations Hazard Class: 3 Flammable liquid I.D. UN1993 Packing Group: II

D. CERCLA Reportable Quantity (RQ) and units (Lb, Kg): 1 Lb

E. Non-Bulk code ___ Bulk code ___

F. Special Provisions ___ ___ ___ ___ ___ ___

G. Labels Required _____ _____ _____

28. SPECIAL HANDLING INFORMATION

_ Material Safety Data Sheets Attached

29. OTHER INFORMATION

I HEREBY AUTHORIZE CWM TO OBTAIN A REPRESENTATIVE SAMPLE FROM MY SHIPMENT FOR THE PURPOSE OF PROFILE APPROVAL FINALIZATION.

30. CHEMICAL WASTE MANAGEMENT CERTIFICATION

Chemical Waste Management, Inc. has all the necessary permits and licenses for the waste that has been characterized and identified by this approved profile.

Date Printed 01/23/96

Profile #
DEN BW7559

31. OTHER HAZARDOUS CONSTITUENTS Indicate if the waste contains any of the following.

METALS	TCLP Information: Check only ONE for each constituent Use units: ppm, mg/l				TCLP Data	TCA or TOTAL Use units: ppm, mg/l, mg/kg or percent			
						California List			
	Less Than	TC Regulated Level	Equal or More	Waste No.	TCLP Actual	Less Than	Regulated Level	Equal or More	Actual
Arsenic as As	X	5.0 mg/l		D004			500 mg/l		
Barium as Ba	X	100.0 mg/l		D005					
Cadmium as Cd	X	1.0 mg/l		D006			100 mg/l		
Chromium tot Cr	X	5.0 mg/l		D007					
Lead as Pb	X	5.0 mg/l		D008			500 mg/l		
Mercury as Hg	X	.2 mg/l		D009			20 mg/l		
Selenium as Se	X	1.0 mg/l		D010			100 mg/l		
Silver as Ag	X	5.0 mg/l		D011					
Nickel as Ni							134 mg/l		
Thallium as Tl							130 mg/l		
Chromium Hex							500 mg/l		
Antimony									
Beryllium									
Copper									
Vanadium									
Zinc									

Date Printed 01/23/96

Profile #
DEN BW7559

32. OTHER HAZARDOUS CONSTITUENTS Indicate if the waste contains any of the following.

ORGANICS	TCLP Information: Check only ONE for each constituent				TCLP Data	TCA or TOTAL Use units: ppm, mg/l or %
	Less Than	Regulated Level	Equal or More	Waste No.	TCLP Analytical Test Results Use units: ppm or mg/l	
Benzene	X	0.5 mg/l		D018		
Carbon Tetrachloride	X	0.5 mg/l		D019		
Chlordane	X	0.03 mg/l		D020		
Chlorobenzene	X	100.0 mg/l		D021		
Chloroform	X	6.0 mg/l		D022		
m-Cresol	X	200 mg/l		D024		
o-Cresol	X	200.0 mg/l		D023		
p-Cresol	X	200.0 mg/l		D025		
Cresol	X	200.0 mg/l		D026		
2,4-D	X	10.0 mg/l		D016		
1,4 Dichlorobenzene	X	7.5 mg/l		D027		
1,2-Dichloroethane	X	0.5 mg/l		D028		
1,1-Dichloroethylene	X	0.7 mg/l		D029		
2,4-Dinitrotoluene	X	0.13 mg/l		D030		
Endrin	X	.02 mg/l		D012		
Heptachlor, & Hydroxide	X	0.008 mg/l		D031		
Hexachloro-1,3 Butadiene	X	0.5 mg/l		D033		
Hexachlorobenzene	X	0.13 mg/l		D032		
Hexachloroethane	X	3.0 mg/l		D034		
Lindane	X	0.4 mg/l		D013		
Methoxychlor	X	10.0 mg/l		D014		
Methyl Ethyl Ketone	X	200.0 mg/l		D035		
Nitrobenzene	X	2.0 mg/l		D036		
Pentachlorophenol	X	100.0 mg/l		D037		
Pyridine	X	5.0 mg/l		D038		
Tetrachloroethylene	X	0.7 mg/l		D039		
Toxaphene	X	0.5 mg/l		D015		
2,4,5-TP Silvex	X	1.0 mg/l		D017		
Trichloroethylene	X	0.5 mg/l		D040		
2,4,5-Trichlorophenol	X	400.0 mg/l		D041		
2,4,6-Trichlorophenol	X	2.0 mg/l		D042		
Vinyl Chloride	X	0.2 mg/l		D043		

CONFIRMATION LETTER

January 23, 1996

HARRY MOSELEY
SPECTRUM SERVICES
1900 WAZEE ST STE 210
DENVER, CO 80202-1259

Re: Confirmation Number 4872349

Attention: HARRY MOSELEY

We are pleased to confirm CWM's approval of your waste material as described below. The attached profile for the waste materials was prepared by CWM based upon information provided by you. It is important that no changes be made to the profile without CWM's consent. If the profile meets with your approval, please call 1-800-843-3604 to schedule shipment of your waste materials.

CWM Profile Number:	BW7556 DEN
Approved Mgmt. Facility:	O.S.C.O - COLORADO or another CWM or CWM approved facility
Waste Name:	RCRA EMPTY DRUMS
Disposal Method:	Direct Landfill
Disposal Price:	$50/drum
Transportation Price:	$7/drum
Demurrage:	$65/hour after the first free 1 1/2 hours Waste Approval Fee No Charge
Profile Expiration Date:	1/23/98

Applicable state and local taxes are not included in these disposal prices. All wastes are priced as profiled, invoiced as actually received. Invoices shall be paid no later than thirty (30) days from the date of receipt. All terms are governed by the Agreement previously executed between our companies. The prices quoted above are subject to change by CWM upon thirty (30) days' prior written notice to you unless otherwise specifically provided or per the terms of our Agreement. If we have not previously concluded a Service Agreement with your company, one is enclosed for your convenience. Please sign and return it to us as soon as possible. Also, if 'Signature on File' does not appear on the signature line of the Waste Profile Sheet, please sign and return it before scheduling your material.

January 23, 1996

Re: Confirmation Number 4872349

If you have any questions or would like to make changes to the profile, please contact your representative.
Thank you for this opportunity to be of service.

Chemical Waste Management, Inc.

Chemical Waste Management, Inc.

Date Printed 01/23/96

WASTE PROFILE

Profile # DEN BW7556

(_) Check here if this is a Recertification LOCATION OF ORIGINAL O.S.C.O - COLORADO

GENERAL INFORMATION

1. Generator Name: US EPA Generator USEPA ID: APPL

2. Generator Address: 500 S SANTA FE DR
DENVER CO 80223-2402

Billing Address: (_) Same
SPECTRUM SERVICES
1900 WAZEE ST STE 210
DENVER CO 80202-1259

3. Technical Contact/Phone: PAUL CASEY 303/292-1650

4. Alternate Contact/Phone: HARRY MOSELEY 303/981-1146

Billing Contact/Phone: HARRY MOSELEY 303/981-1146

PROPERTIES AND COMPOSITION

5. Process Generating Waste: SITE CLEAN UP

6. Waste Name: RCRA EMPTY DRUMS

7A. Is this a USEPA hazardous waste (40 CFR Part 261)? Yes (_) No (X)

B. Identify ALL USEPA listed and characteristic waste code numbers (D,F,K,P,U): _____

State Waste Codes: _____

8. Physical State @ 70F: A. Solid(X) Liquid(_) Both(_) Gas(_) B. Single Layer (X) Multilayer (_) C. Free liq. range 0 to 0%

9A. pH: Range _____ or Not applicable (X) B. Strong Odor (_);describe _____

10. Liquid Flash Point: < 73F (_) 73-99F (_) 100-139F (_) 140-199F (_) >= 200F (_) N.A. (X) Closed Cup (X) Open Cup (_)

11. CHEMICAL COMPOSITION: List ALL constituents (incl. halogenated organics) present in any concentration and forward analysis

Constituents	Range	Unit Description
RCRA EMPTY DRUMS	to 100	%
	to	
	to	
	to	
	to	
	to	
TOTAL COMPOSITION (MUST EQUAL OR EXCEED 100%):	100.000000	

12. OTHER: PCBs if yes, concentration _ _____ ppm, PCBs regulated by 40 CFR 761 (_). Pyrophoric (_) Explosive (_) Radioactive (_) Benzene if yes, concentration _ _____ ppm. NESHAP (_) Shock Sensitive (_) Oxidizer (_) Carcinogen (_) Infectious (_) Other _____

13. If waste subject to the land ban & meets treatment standards, check here: _ & supply analytical results where applicable.

SHIPPING INFORMATION

14. PACKAGING: Bulk Solid (_) Bulk Liquid (_) Drum (X) Type/Size: 55 GALLON DRUM Other _____

15. ANTICIPATED ANNUAL VOLUME: 4 Units: DRUMS Shipping Frequency: ONE TIME

SAMPLING INFORMATION Sample Tracking Number: 4872349

16a. Sample source (drum, lagoon, pond, tank, vat, etc.): _____

Date Sampled: _____ Sampler's Name/Company: _____

16b. Generator's Agent Supervising Sampling: _____ 17. (_) No sample required (See instructions.)

GENERATOR'S CERTIFICATION

I hereby certify that all information submitted in this and all attached documents contains true and accurate descriptions of this waste. Any sample submitted is representative as defined in 40 CFR 261 - Appendix I or by using an equivalent method. All relevant information regarding known or suspected hazards in the possession of the generator has been disclosed. I authorize [redacted] to obtain a sample from any waste shipment for purposes of recertification.

Signature on original profile BW7556 _____ _____

Signature Name and Title Date

Date Printed 01/23/96

Profile #
DEN BW7556

18. This is a Nonwastewater.

19. If this waste is subject to any California list restrictions enter the letter from below (either A, B.1 or B.2) next to each restriction that is applicable:
___ HOCs, ___ PCBs, ___ Acid, ___ Metals, ___ Cyanides

20. Identify ALL Characteristic and Listed USEPA hazardous waste numbers that apply (as defined by 40 CFR 261). For each waste number, identify the subcategory (as applicable, check none, or write in the description from 40 CFR 268.41, 268.42, and 268.43).

REF #	A. US EPA HAZARDOUS WASTE CODE(S)	B. SUBCATEGORY Enter the subcategory description. If not applicable, simply check none		C. APPLICABLE TREATMENT STANDARDS			D. HOW MUST THE WASTE BE MANAGED?
				PERFORMANCE-BASED: Check as applicable		SPECIFIED TECHNOLOGY: If applicable enter the 40 CFR 268.42 table 1 treatment code(s)	
		DESCRIPTION	NONE	268.41(a)	268.43(a)	268.42	Enter letter from below
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							

Management under the land disposal restrictions:
A. RESTRICTED WASTE REQUIRES TREATMENT

B.1 RESTRICTED WASTE TREATED TO PERFORMANCE STANDARDS

B.2 RESTRICTED WASTES FOR WHICH THE TREATMENT STANDARD IS EXPRESSED AS A SPECIFIED TECHNOLOGY (AND THE WASTE HAS BEEN TREATED BY THAT TECHNOLOGY)

B.3 GOOD FAITH ANALYTICAL CERTIFICATION FOR INCINERATED ORGANICS

C. RESTRICTED WASTE SUBJECT TO A VARIANCE

D. RESTRICTED WASTE CAN BE LAND DISPOSED WITHOUT FURTHER TREATMENT

E. NOT CURRENTLY SUBJECT TO LAND DISPOSAL RESTRICTIONS

21. Is this waste a soil or debris? No: X Yes, Soil: _ Yes, Debris: _

22. Specific Gravity Range: .750 to 1.200

23. Indicate the range of each: Units

Cyanides: _ None to _____ _____ Type (free, total, amenable, etc.) _____

Cyanides: _ None to _____ _____ Type (free, total, amenable, etc.) _____

Sulfides: _ None to _____ _____ Type _____

Optional
Phenolics: _ None to _____ _____

Identify the waste color VARIES , DOT physical state Solid ,

and physical appearance DRUMS

Date Printed 01/23/96

Profile #
DEN BW7556

25. COMPLETE ONLY FOR WASTES INTENDED FOR FUELS OR INCINERATION		26. RECLAMATION, FUELS or INCINERATION PARAMETERS (Provide if information is available)
	TOTAL	RANGE
Beryllium as Be	ppm	A. Heat Value (Btu/lb): ____-____
Potassium as K	ppm	B. Water: _____
Sodium as Na	ppm	C. Viscosity (cps): ____@____F _ 100 F _ 150 F
Bromine as Br	%	D. Ash: _____ %
Chlorine as Cl	%	E. Settleable solids: _____ %
Fluorine as F	%	F. Vapor Pressure @ STP (mm/Hg): ____
Sulfur as S	%	G. Is this waste a pumpable liquid? Yes _ No _
		H. Can this waste be heated to improve flow? Yes _ No _
		I. Is this waste soluble in water? Yes _ No _
		J. Particle size: Will the solid portion of this waste pass through a 1/8 inch screen? Yes _ No _

27. TRANSPORTATION INFORMATION

A. Is this a DOT Hazardous Material? Yes _ No X

B. Proper Shipping Name. . . . . : NON-REGULATED MATERIAL

and Additional Description if required: (DRUMS)

C. DOT Regulations: _____ Hazard Class: 00 Non-Regulated Mat. I.D. _____ Packing Group: ___

D. CERCLA Reportable Quantity (RQ) and units (lb, Kg): _____

E. Non-Bulk code ___ Bulk code ___

F. Special Provisions ___ ___ ___ ___ ___ ___

G. Labels Required _____ _____ _____

28. SPECIAL HANDLING INFORMATION

_ Material Safety Data Sheets Attached

29. OTHER INFORMATION

I HEREBY AUTHORIZE CWM TO OBTAIN A REPRESENTATIVE SAMPLE FROM MY SHIPMENT FOR THE PURPOSE OF PROFILE APPROVAL FINALIZATION.

30. CHEMICAL WASTE MANAGEMENT CERTIFICATION

Chemical Waste Management, Inc. has all the necessary permits and licenses for the waste that has been characterized and identified by this approved profile.

Date Printed 01/23/96

Profile #
DEN BW7556

31. OTHER HAZARDOUS CONSTITUENTS Indicate if the waste contains any of the following.

METALS	TCLP Information: Check only ONE for each constituent Use units: ppm, mg/l				TCLP Data	TCA or TOTAL Use units: ppm, mg/l, mg/kg or percent			
						California List			
	Less Than	TC Regulated Level	Equal or More	Waste No.	TCLP Actual	Less Than	Regulated Level	Equal or More	Actual
Arsenic as As	X	5.0 mg/l		D004			500 mg/l		
Barium as Ba	X	100.0 mg/l		D005					
Cadmium as Cd	X	1.0 mg/l		D006			100 mg/l		
Chromium tot Cr	X	5.0 mg/l		D007					
Lead as Pb	X	5.0 mg/l		D008			500 mg/l		
Mercury as Hg	X	.2 mg/l		D009			20 mg/l		
Selenium as Se	X	1.0 mg/l		D010			100 mg/l		
Silver as Ag	X	5.0 mg/l		D011					
Nickel as Ni							134 mg/l		
Thallium as Tl							130 mg/l		
Chromium Hex							500 mg/l		
Antimony									
Beryllium									
Copper									
Vanadium									
Zinc									

Date Printed 01/23/96

Profile #
DEN BW7556

32. OTHER HAZARDOUS CONSTITUENTS Indicate if the waste contains any of the following.

ORGANICS	TCLP Information: Check only ONE for each constituent				TCLP Data	TCA or TOTAL Use units: ppm, mg/l or %
	Less Than	Regulated Level	Equal or More	Waste No.	TCLP Analytical Test Results Use units: ppm or mg/l	
Benzene	X	0.5 mg/l		D018		
Carbon Tetrachloride	X	0.5 mg/l		D019		
Chlordane	X	0.03 mg/l		D020		
Chlorobenzene	X	100.0 mg/l		D021		
Chloroform	X	6.0 mg/l		D022		
m-Cresol	X	200 mg/l		D024		
o-Cresol	X	200.0 mg/l		D023		
p-Cresol	X	200.0 mg/l		D025		
Cresol	X	200.0 mg/l		D026		
2,4-D	X	10.0 mg/l		D016		
1,4 Dichlorobenzene	X	7.5 mg/l		D027		
1,2-Dichloroethane	X	0.5 mg/l		D028		
1,1-Dichloroethylene	X	0.7 mg/l		D029		
2,4-Dinitrotoluene	X	0.13 mg/l		D030		
Endrin	X	.02 mg/l		D012		
Heptachlor, & Hydroxide	X	0.008 mg/l		D031		
Hexachloro-1,3 Butadiene	X	0.5 mg/l		D033		
Hexachlorobenzene	X	0.13 mg/l		D032		
Hexachloroethane	X	3.0 mg/l		D034		
Lindane	X	0.4 mg/l		D013		
Methoxychlor	X	10.0 mg/l		D014		
Methyl Ethyl Ketone	X	200.0 mg/l		D035		
Nitrobenzene	X	2.0 mg/l		D036		
Pentachlorophenol	X	100.0 mg/l		D037		
Pyridine	X	5.0 mg/l		D038		
Tetrachloroethylene	X	0.7 mg/l		D039		
Toxaphene	X	0.5 mg/l		D015		
2,4,5-TP Silvex	X	1.0 mg/l		D017		
Trichloroethylene	X	0.5 mg/l		D040		
2,4,5-Trichlorophenol	X	400.0 mg/l		D041		
2,4,6-Trichlorophenol	X	2.0 mg/l		D042		
Vinyl Chloride	X	0.2 mg/l		D043		

Emergency Contact Telephone Number

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No. C O D 9 8 0 7 1 6 9 5 5 | Manifest Document No. 6 1 6 3 6 | 2. Page 1 of 1 | Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address U.S. EPA
500 SOUTH SANTA FE DRIVE
DENVER, CO 80223
4. Generator's Phone (303) 292-1850

A. State Manifest Document Number
B. State Generator's ID
C. State Transporter's ID
D. Transporter's Phone
E. State Transporter's ID
F. Transporter's Phone
G. State Facility's ID
H. Facility's Phone (303) 289-1937

5. Transporter 1 Company Name: OIL AND SOLVENT PROCESS CO. | 6. US EPA ID Number: C O D 9 8 0 5 9 1 1 8 4
7. Transporter 2 Company Name | 8. US EPA ID Number
9. Designated Facility Name and Site Address: CHEMICAL WASTE MANAGEMENT, INC.
9131 EAST 96TH AVENUE
HENDERSON CO 80640 | 10. US EPA ID Number: C O D 9 8 0 5 9 1 4 8 4

	11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a.	R.Q., WASTE FLAMMABLE LIQUID, N.O.S., 3, UN1993, II, (D001), (PETROLEUM DISTILLATES) PROFILE #BH7559		6	DM	330	G	D001 D006 D008 F003 F005
b.	NON REGULATED MATERIAL PROFILE #BH7556		3	DM	00000	G	
c.							
d.							

J. Additional Descriptions for Materials Listed Above: B - Empty Drums - PER KIRKBRIDE

K. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information
24 HOUR EMERGENCY CONTACT (800) 424-9300
TR# 154735 26699

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national governmental regulations. DEN

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

GENERATOR

Printed/Typed Name: X Rebecca J. Thomas | Signature: X Rebecca J. Thomas | Month Day Year: 02 12 96

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials
Printed/Typed Name: AUNE J. WESTOVER | Signature | Month Day Year: 02 12 96

18. Transporter 2 Acknowledgement of Receipt of Materials
Printed/Typed Name | Signature | Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.
Printed/Typed Name | Signature | Month Day Year: 02 12 96

ORIGINAL - RETURN TO GENERATOR

ENDORSEMENT FOR
MOTOR CARRIER POLICIES OF INSURANCE FOR PUBLIC LIABILITY
UNDER SECTIONS 29 AND 30 OF THE MOTOR CARRIER ACT OF 1980

Form Approved
OMB No. 2125-0074

Issued to Oil & Solvent Process Co. of Henderson, Colorado

Dated at Chicago, Illinois this 24th day of October, 19 95

Amending Policy No. BUA802517949 Effective Date 5/15/94

Name of Insurance Company Continental Casualty Company

Telephone Number (312) 280-5600, Countersigned by _____
Authorized Country Representative

The policy to which this endorsement is attached provides primary or excess insurance, as indicated by "☒", for the limits shown:

☒ This insurance is primary and the company shall not be liable for amounts in excess of $ 5,000,000 for each accident.

☐ This insurance is excess and the company shall not be liable for amounts in excess of $_____ for each accident in excess of the underlying limit of $_____ for each accident.

Whenever required by the Federal Highway Administration (FHWA) or the Interstate Commerce Commission (ICC), the company agrees to furnish the FHWA or the ICC a duplicate of said policy and all its endorsements. The company also agrees, upon telephone request by an authorized representative of the FHWA or the ICC, to verify that the policy is in force as of a particular date.

Cancellation of this endorsement may be effected by the company or the insured by giving (1) thirty-five (35) days notice in writing to the other party (said 35 days notice to commence from the date the notice is mailed, proof of mailing shall be sufficient proof of notice), and (2) if the insured is subject to the ICC's jurisdiction, by providing thirty (3) days notice to the ICC (said 30 days notice to commence from the date the notice is received by the ICC at its office in Washington, D.C.).

DEFINITIONS AS USED IN THIS ENDORSEMENT

ACCIDENT includes continuous or repeated exposure to conditions which results in bodily injury, property damage, or environmental damage which the insured neither expected nor intended.

MOTOR VEHICLE means a land vehicle, machine, truck, tractor, trailer, or semitrailer propelled or drawn by mechanical power and used on a highway for transporting property, or any combination thereof.

BODILY INJURY means injury to the body, sickness, or disease to any person, including death resulting from any of these.

ENVIRONMENTAL RESTORATION means restitution for the loss, damage, or destruction of natural resources arising out of the accidental discharge, dispersal, release or escape into or upon the land, atmosphere, watercourse, or body of water, of any commodity transported by a motor carrier. This shall include the cost of removal and the cost of necessary measures taken to minimize or mitigate damage to human health, the natural environment, fish, shellfish, and wildlife.

PROPERTY DAMAGE means damage to or loss of use of tangible property.

PUBLIC LIABILITY means liability for bodily injury, property damage, and environmental restoration.

The insurance policy to which this endorsement is attached provides automobile liability insurance and is amended to assure compliance by the insured, within the limits stated herein, as a motor carrier of property, with Sections 29 and 30 of the Motor Carrier Act of 1980 and the rules and regulations of the Federal Highway Administration (FHWA) and the Interstate Commerce Commission (ICC).

The Motor Carrier Act of 1980 requires limits of financial responsibility according to the type of carriage and commodity transported by the motor carrier. It is the MOTOR CARRIER'S obligation to obtain the required limits of financial responsibility. THE SCHEDULE OF LIMITS SHOWN ON THE REVERSE SIDE DOES NOT PROVIDE COVERAGE. The limits shown in the schedule are for information purposes only.

consideration of the premium stated in the policy to which this endorsement is attached, the insurer (the company) agrees ...cy, within the limits of liability described herein, any final ...gment recovered against the insured for public liability ...ulting from negligence in the operation, maintenance or use ... motor vehicles subject to the financial responsibility ...quirements of Sections 29 and 30 of the Motor Carrier Act ... 1980 regardless of whether or not each motor vehicle is ...ecifically described in the policy and whether or not such ...gligence occurs on any route or in any territory authorized ... be served by the insured or elsewhere. Such insurance as ...fforded, for public liability, does not apply to injury to or ...ath of the insured's employees while engaged in the course ... their employment, or property transported by the insured, ...signated as cargo. It is understood and agreed that no ...ndition, provision, stipulation, or limitation contained in the ...licy, this endorsement, or any other endorsement thereon, ... violation thereof, shall relieve the company from liability ... from the payment of any final judgment, within the limits ... liability herein described, irrespective of the financial ...ndition, insolvency or bankruptcy of the insured. However, all terms, conditions, and limitations in the policy to which the endorsement is attached shall remain in full force and effect as binding between the insured and the company. The insured agrees to reimburse the company for any payment made by the company on account of any accident, claim, or suit involving a breach of the terms of the policy, and for any payment that the company would not have been obligated to make under the provision of the policy except for the agreement contained in this endorsement.

It is further understood and agreed that, upon failure of the company to pay any final judgment recovered against the insured as provided herein, the judgment creditor may maintain an action in any court of competent jurisdiction against the company to compel such payment.

The limits of the company's liability for the amounts prescribed in this endorsement apply separately, to each accident, and any payment under the policy because of any one accident shall not operate to reduce the liability of the company for the payment of final judgments resulting from any other accident.

SCHEDULE OF LIMITS

Public Liability

	Type of Carriage	Commodity Transported	Minimum Insurance
(1)	For-hire (In interstate or foreign commerce).	Property (nonhazardous).	$ 750,000
(2)	For-hire and Private (In interstate, foreign, or intrastate commerce).	Hazardous substances as defined in 49 CFR 171.8, transported in cargo tanks, portable tanks, or hopper-type vehicles with capacities in excess of 3,500 water gallons; or in bulk Class A or B explosives, poison gas (Poison A), liquefied compressed gas or compressed gas, or highway route controlled quantity radioactive materials as defined in 49 CFR 173.403.	5,000,000
(3)	For-hire and Private (In interstate or foreign commerce: in any quantity) or (In intrastate commerce: in bulk only)	Oil listed in 49 CFR 172.101; hazardous materials and hazardous substances defined in 49 CFR 171.8 and listed in 49 CFR 172.101, but not mentioned in (2) above or (4) below.	1,000,000
(4)	For-hire and Private (In interstate or foreign commerce).	Any quantity of Class A or B explosives, any quantity of poison gas (Poison A), or highway route controlled quantity radioactive materials as defined in 49 CFR 173.403.	5,000,000

Note: The type of carriage listed under (1), (2), and (3) applies to vehicles with a gross vehicle weight rating of 10,000 pounds or more. The type of carriage listed under number (4) applies to all vehicles with a gross vehicle weight rating of less than 10,000 pounds.

APPENDIX V
Chemical Analytical Data

SPECTRUM SERVICES, INC.
ROBCO SUPERFUND SITE - PHASE II
VERIFICATION SAMPLE LOCATIONS

SAMPLE NUMBER	LOCATION		ELEVATION
	NORTHING	EASTING	
1	682487	142187	5226.5
2 / 9	682562	142162	5226.5
3	682643	142147	5223.4
4	682705	142125	5225.3
5 / 8 / 10	682775	142125	5225.6
6	682849	142134	5223.1
7 / 11	682914	142203	5224.7
12	682527.7	142570.9	5229.1
13/16/18	682581.3	142550.2	5228.1
14	682629.5	142529	5228.7
15	682681.5	142508	5228.9
17	682289	142269	5226.5
19	683137.3	142407.1	5233.2
20	683041.8	142445.3	5237.1
21	682987	142431	5233.3

ERM-Rocky Mountain, Inc.

Sample Chain of Custody

Project No.: Robco | Project Name: Spectrum Phase 2

Sampler: Paul Casey - Bill Hardesty

ERM T.R. Number	Date	Time	COMP	GRAB	Sample Location	Number of Containers	Remarks (& Rad/Hz)	
PH2-001	2/18/96	8:10		X	West zone trench wall	1	light-med sandy	19.3
PH2-002	2/18/96	8:17		X	West zone trench wall	1	dark black grit	19.2
PH2-003	2/18/96	8:26		X	West zone trench wall	1	med brown fines	19.9
PH2-004	2/18/96	8:39		X	West zone trench wall	1	grey powder	21.2
PH2-005	2/18/96	8:46		X	West zone trench wall	1	med brown	19.7
PH2-006	2/18/96	8:58		X	West zone trench wall	1	med brown	19.2
PH2-007	2/18/96	9:09		X	West zone trench wall	1	dark brown fines	19.8
~~PH2-007~~	~~2/18/96~~	~~9:17~~		X	~~West zone trench wall~~	1		

Sample Relinquished	Date	Time	Sample Received by:	Date	Time	Reason for Transfer
[signature]	2/18/96	9:17	Bill Hardesty	2/18/96	9:17	soil analysis for Pb, Rs, Zn
Bill Hardesty	2/18/96	12:00	[signature]	2/18/96	12:00	soil removed, data rec'd

COPIES: White & Yellow copies accompany sample shipment to laboratory. Yellow copy retained by laboratory. White copy to be returned to ERM for files. Pink copy retained by sampler.

ERM-Rocky Mountain, Inc.

Sample Chain of Custody

Project No.: | Project Name: Robco Denver

Sampler: Bill Hardesty / Paul Casey / Conoco

ERM T.R. Number	Date	Time	COMP	GRAB	Sample Location	Number of Containers	Remarks	µRad/hr
PH2-008	2/18/96	2:15		X	resample area of PH2-005		med brown powder	17.1
PH2 009	2/18/96	3:00		X	resample area of PH2-002 after scrape		grey gritty	18.1
PH2-010	2/18/96	3:30		X	resample area of PH2-005 after scrape		dark brown	18.3
PH2-011	2/18/96	3:50		X	resample area of PH2-007 after scrape		med sand	19.0

Sample Relinquished	Date	Time	Sample Received by:	Date	Time	Reason for Transfer
[signature]	2/18/96	2:15pm	Bill Hardesty	2/18/96	2:15pm	soil analysis
Bill Hardesty	2/18/96	2:45pm	[signature]	2/18/96	2:45pm	data rec'd, soil removal

COPIES: White & Yellow copies accompany sample shipment to laboratory. Yellow copy retained by laboratory. White copy to be returned to ERM for files. Pink copy retained by sampler.

EDXRF ANALYSIS
SPECTRACE INSTRUMENTS

PROCEDURE : MID Z
FILTER USED : FIVE
ATMOSPHERE : AIR
COUNT RATE RANGE : MED
ANALYSIS METHOD : FUN. PARAMS.

TUBE VOLTAGE : 30 KV
TUBE CURRENT : 0.25 MA
LIVETIME : 250 SEC
PRESET COUNT : 0 K

TIME : 12:29 pm

DATE : 2/18/96

SAMPLE	ELEMENT	PEAK	BACK	CONCENTRATION
PH2001-021896				
	ZN	4155	5740	1069.488 PPM
	AS	0	26	N D
	PB	3546	5112	444.714 PPM
	SIO5	0	0	99.849 DIFF
PH2002-021896				
	ZN	24479	24315	5218.922 PPM
	AS	580	29316	57.980 PPM
	PB	19235	18636	2734.241 PPM
	SIO5	0	0	99.199 DIFF
PH2003-021896				
	ZN	20513	19653	3874.387 PPM
	AS	149	12773	0.000 PPM
	PB	7664	8766	929.711 PPM
	SIO5	0	0	99.520 DIFF
PH2004-021896				
	ZN	9561	11193	1970.257 PPM
	AS	0	42	N D
	PB	6082	7625	797.515 PPM
	SIO5	0	0	99.722 DIFF
PH2005-021896				
	ZN	9396	10556	2329.198 PPM
	AS	0	57	N D
	PB	8916	9922	1181.482 PPM
	SIO5	0	0	99.649 DIFF
PH2006-021896				
	ZN	4761	6023	1426.149 PPM
	AS	0	34	N D
	PB	4705	6228	592.119 PPM
	SIO5	0	0	99.798 DIFF
PH2007-021896				
	ZN	28564	30061	6927.824 PPM
	AS	0	230	N D
	PB	38770	37066	5963.297 PPM
	SIO5	0	0	98.711 DIFF

Bill Hardesty
Roberto 2/18/96

EDXRF ANALYSIS
SPECTRACE INSTRUMENTS

PROCEDURE : MID Z
FILTER USED : FIVE
ATMOSPHERE : AIR
COUNT RATE RANGE : MED
ANALYSIS METHOD : FUN. PARAMS.

TUBE VOLTAGE : 30 KV
TUBE CURRENT : 0.25 MA
LIVETIME : 250 SEC
PRESET COUNT : 0 K

TIME : 4:30 pm

DATE : 2/18/96

SAMPLE	ELEMENT	PEAK	BACK	CONCENTRATION
PH2008-021896				
	ZN	14049	14661	2878.744 PPM
	AS	0	58	N D
	PB	8959	9887	1187.455 PPM
	SIO5	0	0	99.593 DIFF

Bill Hardesty
Robco 2/18/96
XRF yellow

EDXRF ANALYSIS
SPECTRACE INSTRUMENTS

PROCEDURE : MID Z
FILTER USED : FIVE
ATMOSPHERE : AIR
COUNT RATE RANGE : MED
ANALYSIS METHOD : FUN. PARAMS.

TUBE VOLTAGE : 30 KV
TUBE CURRENT : 0.25 MA
LIVETIME : 250 SEC
PRESET COUNT : 0 K

TIME : 5:00 pm

DATE : 2/18/96

SAMPLE	ELEMENT	PEAK	BACK	CONCENTRATION
PH2009-021896				
	ZN	3897	5223	1118.333 PPM
	AS	0	27	N D
	PB	3562	4752	442.908 PPM
	SIO5	0	0	99.844 DIFF

Bill Hardesty
Robco 2/18/96
XRF yellow

EDXRF ANALYSIS
SPECTRACE INSTRUMENTS

PROCEDURE : MID Z
FILTER USED : FIVE
ATMOSPHERE : AIR
COUNT RATE RANGE : MED
ANALYSIS METHOD : FUN. PARAMS.

TUBE VOLTAGE : 30 KV
TUBE CURRENT : 0.25 MA
LIVETIME : 250 SEC
PRESET COUNT : 0 K

TIME : 6:15 pm

DATE : 2/18/96

SAMPLE	ELEMENT	PEAK	BACK	CONCENTRATION	
NIST2711-CCAL					%D
	ZN	1558	3263	377.059	PPM Zn = 8 %
	AS	684	17785	115.891	PPM As = 10 %
	PB	10843	11759	1416.629	PPM Pb = 22 %
	SIO5	0	0	99.809	DIFF
BLANK-021896					
	ZN	38	482	0.000	PPM
	AS	36	320	0.000	PPM
	PB	0	2	N D	
	SIO5	0	0	100.000	DIFF
PH2010-021896					
	ZN	7708	8864	1596.275	PPM
	AS	0	35	N D	
	PB	4925	6256	641.364	PPM
	SIO5	0	0	99.775	DIFF

EDXRF ANALYSIS
SPECTRACE INSTRUMENTS

PROCEDURE : MID Z
FILTER USED : FIVE
ATMOSPHERE : AIR
COUNT RATE RANGE : MED
ANALYSIS METHOD : FUN. PARAMS.

TUBE VOLTAGE : 30 KV
TUBE CURRENT : 0.25 MA
LIVETIME : 250 SEC
PRESET COUNT : 0 K

TIME : 6:40 pm

DATE : 2/18/96

SAMPLE	ELEMENT	PEAK	BACK	CONCENTRATION
PH2011-021896				
	ZN	1368	2851	557.528 PPM
	AS	0	13	N D
	PB	1217	2725	139.394 PPM
	SIO5	0	0	99.930 DIFF

Bill Hardesty
Rebco XRF
2/18/96

ERM-Rocky Mountain, Inc.

Sample Chain of Custody

Project No.: | Project Name: Kobco Denver

Sampler: Bill Hardesty

ERM T.R. Number	Date	Time	COMP	GRAB	Sample Location	Number of Containers	Remarks	µRad/hr
PH2 012-022796		1:40pm		✓	east wall east toe	1	dark grey	18.7
PH2 013-022796		1:48pm		✓	east wall east toe	1	dark grey	17.9
PH2 014-022796		1:53pm		✓	east wall east toe	1	dark sand	19.0
PH2 015-022796		1:59pm		✓	east wall east toe	1	med sand	15.7

Sample Relinquished	Date	Time	Sample Received by:	Date	Time	Reason for Transfer
Bill Hardesty	2/27/96	1:40→	Bill Hardesty	2/27/96	15:00	soil analysis
Bill Hardesty	2/27/96	15:00	Bill Hardesty	2/27/96	15:00	data recd, soil removal

COPIES: White & Yellow copies accompany sample shipment to laboratory. Yellow copy retained by laboratory. White copy to be returned to ERM for files. Pink copy retained by sampler.

EDXRF ANALYSIS
SPECTRACE INSTRUMENTS

PROCEDURE : MID Z
FILTER USED : FIVE
ATMOSPHERE : AIR
COUNT RATE RANGE : MED
ANALYSIS METHOD : FUN. PARAMS.

TUBE VOLTAGE : 30 KV
TUBE CURRENT : 0.25 MA
LIVETIME : 250 SEC
PRESET COUNT : 0 K

TIME : 5:13 pm

DATE : 2/27/96

SAMPLE	ELEMENT	PEAK	BACK	CONCENTRATION
PH2012-022796				
	ZN	6644	7692	1937.575 PPM
	AS	0	46	N D
	PB	7070	8580	914.921 PPM
	SIO5	0	0	99.715 DIFF
PH2013-022796				
	ZN	16557	16932	3497.504 PPM
	AS	157	19938	16.849 PPM
	PB	12583	13305	1706.967 PPM
	SIO5	0	0	99.478 DIFF
PH2014-022796				
	ZN	16826	16288	3122.350 PPM
	AS	0	25	N D
	PB	3172	4652	320.381 PPM
	SIO5	0	0	99.656 DIFF
PH2015-022796				
	ZN	3264	4730	743.162 PPM
	AS	287	5098	29.342 PPM
	PB	2383	3465	305.909 PPM
	SIO5	0	0	99.892 DIFF

Bill Hardesty
Robco 2/27/96

ERM-Rocky Mountain, Inc.

Sample Chain of Custody

Project No.: | Project Name: Robco Denver Phase II

Sampler: Bill Hardesty

ERM T.R. Number	Date	Time	COMP	GRAB	Sample Location	Number of Containers	Remarks	µ Rad/hr
PH2 016-022896		11:00		✓	east wall east zone	1	Phase 2 toe of AOC	dark grey 19.7
PH2 017-022896		11:08		✓	south west tie in	1	Phase 2 toe of AOC	med brown 19.4

Sample Relinquished	Date	Time	Sample Received by:	Date	Time	Reason for Transfer
Bill Hardesty	2/28/96	11:08	Bill Hardesty	2/28/96	11:08	soil analysis (Pb, Zn, As)
Bill Hardesty	2/28/96	12:10	Bill Hardesty	2/28/96	12:10	soil removal, data rec'd

COPIES: White & Yellow copies accompany sample shipment to laboratory. Yellow copy retained by laboratory. White copy to be returned to ERM for files. Pink copy retained by sampler.

EDXRF ANALYSIS
SPECTRACE INSTRUMENTS

PROCEDURE : MID Z
FILTER USED : FIVE
ATMOSPHERE : AIR
COUNT RATE RANGE : MED
ANALYSIS METHOD : FUN. PARAMS.

TUBE VOLTAGE : 30 KV
TUBE CURRENT : 0.25 MA
LIVETIME : 250 SEC
PRESET COUNT : 0 K

TIME : 2:30 pm

DATE : 2/28/96

SAMPLE	ELEMENT	PEAK	BACK	CONCENTRATION
PH2016-022896				
	ZN	9528	10807	1914.241 PPM
	AS	0	157	N D
	PB	26016	27262	2795.775 PPM
	SIO5	0	0	99.525 DIFF
PH2017-022896				
	ZN	5304	6114	977.290 PPM
	AS	0	30	N D
	PB	4145	5533	420.209 PPM
	SIO5	0	0	99.860 DIFF

Bill Hardesty
Robco XRF 2/28/96
XRF - yellow

EDXRF ANALYSIS
SPECTRACE INSTRUMENTS

PROCEDURE : MID Z
FILTER USED : FIVE
ATMOSPHERE : AIR
COUNT RATE RANGE : MED
ANALYSIS METHOD : FUN. PARAMS.

TUBE VOLTAGE : 30 KV
TUBE CURRENT : 0.25 MA
LIVETIME : 250 SEC
PRESET COUNT : 0 K

TIME : 10:30 am

DATE : 3/7/96

SAMPLE	ELEMENT	PEAK	BACK	CONCENTRATION	
NIST2710-CCAL					% D
beginning CCAL	ZN	74466	3925	6975.119 PPM	Zn = 0.3% ✓
	AS	10873	78035	609.673 PPM	As = 3% ✓
	PB	90634	8819	5610.821 PPM	Pb = 1% ✓
	SIO5	0	0	98.680 DIFF	
ASH-NO3-CCAL					
	ZN	278872	3195	22394.402 PPM	
	AS	0	225	N D	
	PB	65661	6435	4499.936 PPM	
	SIO5	0	0	97.311 DIFF	
SLG2611-PERF					MDL = ppm
beginning performance check	ZN	29437	3505	1465.291 PPM	Zn = 8ppm ✓
	AS	4440	9867	201.961 PPM	As = 5ppm ✓
	PB	8613	4501	297.118 PPM	Pb = 7ppm ✓
	SIO5	0	0	99.804 DIFF	
BLANK-030696					
	ZN	0	2	N D ✓	
	AS	11	425	11.825 PPM ✓	
	PB	16	448	0.000 PPM ✓	
	SIO5	0	0	99.980 DIFF	
PH2018-030696					
	ZN	12188	507	570.095 PPM	Resample of PH2016
	AS	370	368	0.000 PPM	After Excavation
	PB	651	398	0.000 PPM	EAST SIDE WZ
	SIO5	0	0	99.943 DIFF	
PH2019-030696					
	ZN	1883	1569	0.000 PPM	Wall of
	AS	303	1833	4.315 PPM	Contingency
	PB	386	1724	0.000 PPM	Zone
	SIO5	0	0	100.000 DIFF	
PH2020-030696					
	ZN	15837	1758	1274.663 PPM	Wall of
	AS	0	7	N D	Contingency
	PB	10487	1618	541.969 PPM	Zone
	SIO5	0	0	99.818 DIFF	

Bill Hardesty
3/6/96
Robco XRF

EDXRF ANALYSIS
SPECTRACE INSTRUMENTS

PROCEDURE : MID Z
FILTER USED : FIVE
ATMOSPHERE : AIR
COUNT RATE RANGE : MED
ANALYSIS METHOD : FUN. PARAMS.

TUBE VOLTAGE : 30 KV
TUBE CURRENT : 0.25 MA
LIVETIME : 250 SEC
PRESET COUNT : 0 K

TIME : 11:46 pm

DATE : 3/6/96

SAMPLE	ELEMENT	PEAK	BACK	CONCENTRATION	
PH2021-030696					Wall of Contingency Zone
	ZN	13455	1943	532.446 PPM	
	AS	174	5518	0.000 PPM	
	PB	4617	2002	135.720 PPM	
	SIO5	0	0	99.933 DIFF	
NIST2711-CCAL					%D
ending CCAL	ZN	4148	1571	366.241 PPM	Zn= 5% ✓
	AS	1351	20748	80.748 PPM	As= 23% ✓
	PB	22676	3388	1191.762 PPM	Pb = 3% ✓
	SIO5	0	0	99.836 DIFF	

Bill Hardesty
Robco XRF
3/6/96

APPENDIX VI
Geotechnical Test Results

ERM-Rocky Mountain, Inc.

5950 South Willow Drive
Suite 200
Greenwood Village,
Colorado 80111-5144
(303) 741-5050
(303) 773-2624 (Fax)

March 22, 1996

Mr. Dennis Boll, P.E.
Sverdrup Environmental, Inc.
13723 Riverport Drive
Maryland Heights, MO 63043

Ms. Elizabeth Baracani, P.G.
Sverdrup Environmental, Inc.
1746 Cole Boulevard
Suite 225
Golden, Colorado 80410

Mr. Harry Moseley
Spectrum Services, Inc.
1900 Wazee Street, Suite 210
Denver, Colorado 80202

ERM

Reference: ROBCO Site Remedial Response Action. Phase II Activities.

Subject: **Quality Assurance Review - CTC-Geotek letter date 3/20/96.**

To Whom It May Concern;

Attached you will find questions asked by CTC-Geotek in their letter of March 20, 1996 pertaining to Phase II geotechnical testing results and supporting information. As you will note, the questions pertain to minor issues and should be easily answered.

The questions found under Part A of the letter have been previously answered verbally on January 12, 1996 as part of a "Resolution Meeting" held at the ROBCO Site, but require closure. The questions presented in Part B have been addressed between the CQAO, CTC-Geotek, Engineer, Spectrum Services, Inc. and the Phase II Contractor subcontractor RMC verbally, but require a written response.

Should you have any questions you may contact me at 741-5050.

Sincerely,

ERM-Rocky Mountain, Inc.

Daniel S. Hinds
ROBCO Site Program Manager

cc: Distribution List
Mike Keller
Ray Miskines
Project File

DOC: P:\EC\R\HOMDEPOT\LETTER\HOMEDEP.075

CTC-GEOTEK
ENGINEERING TESTING INSPECTION

March 20, 1996

Mr. Daniel Hinds
ERM-Rocky Mountain, Inc.
5950 South Willow Drive, Suite 200
Greenwood Village, Colorado 80111-5144

Subject: Quality Assurance Review
Robco-Home Depot (Phase II)
500 South Santa Fe Drive
Denver, Colorado
Project No. 953138

Dear Mr. Hinds:

Per your request, we are providing a review of the Phase II Quality Control subcontractor, Rocky Mountain Consultants, Inc.

The following minor deviations have been determined.

A) On January 12, 1996, a meeting between ERM-Rocky Mountain, Inc., CTC-Geotek, Inc., and the Phase II subcontractors occurred resolving the following discrepancies.

1. Failing density and/or moisture test results were cleared without passing retests. (See Table 1-from meeting dated January 12, 1996)

2. The recommended moisture range of ±3%, as determined by ASTM D-698, was not followed, but rather the range was widened due to the nature of the soil.

3. The minimum compaction requirement of 95%, as determined by ASTM D-698, was followed, but rather test results were founded to be acceptable by QC at 94.6% and above.

Please formally address the remedial action or reasoning to allow for these minor discrepancies.

B) 1. Within the first month of fill placement, only two Proctors were performed by the QC representative producing similar values. QA determined four Proctor values ranging from 112 PCF to 130 PCF.

155 SOUTH NAVAJO STREET DENVER COLORADO 80223 303 698 1050 (FAX) 303 698 1053

B) 2. In-place density tests frequently exceeded 100% with several of these tests exceeding 106% compaction without performing Proctor checks.

3. Approximately 3 to 4 feet of fill was placed, in 9" compacted lifts, before in-place density tests were performed.

4. On January 24, 1996, QC and QA each obtained a representative sample to perform the necessary laboratory analysis. This sample was blended and split adequately in order to generate similar results. QC's Proctor No. 5 obtained a optimum value of 116.3 PCF at 12.7%. QA's Proctor No. 7 obtained an optimum value of 122.6 PCF at 10.3%.

5. Future retests were cleared using a different Proctor value than the original Proctor value. Proctor checks were not performed to allow this change. (See retests No. 30, No. 37, No. 43, No. 110, and No. 196).

6. Initially, two retests were performed on each failing test. Later, one retest was performed on each failing test.

7. In-place density tests were performed with passing results, but certain tests were retested at a later date. Please explain your reasoning for the retests, such as the previous day's weather conditions, etc..

Please have the Phase II subcontractors provide written justification addressing these discrepancies, in order, to close this phase of the project.

If you have any questions regarding this letter, please do not hesitate to contact the undersigned.

CTC-GEOTEK, INC.

Blair G. Peterson, SET

Spectrum

March 22, 1996

Ms. Elizabeth Baracani, P.G.
Sverdrup Environmental Inc.
1746 Cole Blvd., Suite 225
Golden, Colorado 80401

Mr. Dennis Boll, P. E.
Sverdrup Corporation Inc.
13723 Riverport Drive
Maryland Heights, Missouri 63043

RE: Response to CTC-GEOTEK March 20, 1996 Letter to ERM-Rocky Mountain, Inc. Regarding Geotechnical Testing Performed for Phase II of the Robinson Brick Company (ROBCO) Site Phased Remedial Response Actions, Phase II.

Dear Ms. Baracani and Mr. Boll:

On March 21, 1996, Spectrum Services, Inc. (Spectrum) received a fax copy of a letter from Mr. Blair G. Peterson of CTC-GEOTEK to Mr. Daniel Hinds of ERM-Rocky Mountain, Inc., dated March 20, 1996. This letter was the result of Mr. Peterson's review of Phase 2 geotechnical testing results in conjunction with ERM-Rocky Mountain, Inc. CQAO. The letter requests that Spectrum address several "minor" issues concerning the geotechnical testing and construction methods that were used at the site. Spectrum felt that these issues had been addressed either at the January 12, 1996 meeting or during the daily review of our geotechnical testing results and on-site interaction with CTC-GEOTEK and the CQAO, ERM-Rocky Mountain, Inc. However, for the record, the following responses are provided to issues raised in Mr. Peterson's letter.

Section A

1) The failing density tests referred to were all retested and passed with Mr. Peterson present to observe and approve of the retesting.

2) As to Spectrum being required to meet the recommended moisture range of three percent within optimum, it was agreed upon at the January 12, 1996 meeting, because of the nature of the soil (granular and silty) that Spectrum would attempt to achieve the optimum moisture content but must meet the minimum compaction requirement of 95%.

3) The minimum compaction requirement of 95% was met for all soil placed and in accordance with standard industry practice. A test of greater than equal to 94.6% are considered 95% by rounding off and thus meet the contract specifications.

[redacted] Street, Suite 810
[redacted] Colorado 80202
303.292.1850 fax 303.292.1886

Section B

1) *Within the first month of fill placement, only two Proctors were performed by Spectrum that produced similar values. CTC-GEOTEK performed four Proctors with values ranging from 112 PCF to 130 PCF.*

Spectrum performed the number of proctors required by contract specification given the required frequency. After discussions with CTC-GEOTEK about the variability of QA's results, Spectrum performed additional proctors to match their results.

2) *In-place density tests frequently exceeded 100% with several of these tests exceeded 106% compaction without performing Proctor checks.*

Two factors can greatly effect maximum dry density and yield test results in excess of 100% compaction. A standard proctor is performed under the theory that approximately 12,400 ft-lbf/ft 3 of energy is applied to the soil. The modified proctor applies over four times the amount of energy that the standard apples. Thus these energy amount of energy amounts can be exceeded under field conditions (>100 %).

Additionally, when testing fill with the amount of debris (concrete, cobbles, asphalt, wood, ash, coal, rocks, etc.) that the fill contained, the field tested soil will not exactly match the laboratory proctor sample. The varying type and amount of the debris within the sample location and lab sample can lead to varying densities. This combination of varying coarse fractions and greater compaction energies can and did yield greater than 100% field compaction test results.

3) *According to CTC-GEOTEK 3 to 4 feet of fill was placed, in 9" compacted lifts, before in-place density tests were performed.*

Spectrum did not place 3 to 4 feet of fill before any initial testing was performed. By adding additional lifts on top of the compacted lifts, Spectrum was ensuring that the compaction specification was being met. Typically, a loose lift of soil was placed on top of a compacted lift at the end of each day and then this lift was ripped and replaced in the event of frost. The added soil was a barrier to the compacted lift and allowed us to maintain our production rates and meet the specification. Spectrum performed one field test for every 120 yards of placed material, which exceeds the specification for compaction testing.

4) *On January 24, 1996, QC and QA each obtained a representative sample to perform the necessary laboratory analysis. This sample was blended and split adequately in order to generate similar results. QC's Proctor No. 5 obtained a optimum value of 116.3 PCF at 12.7%. QA's Proctor No. 7 obtained an optimum value of 122.6 PCF at 10.3%.*

With the highly variable material that was to be placed, a total homogenous sample is unlikely. For example, the rock content measured in QC proctor was 30% while CTC-GEOTEK's was 12.9 for the sample listed above.

5) *Future retests were cleared using a different Proctor value than the original Proctor value. Proctor checks were not performed to allow this change (See retests No. 30, No. 37, No. 43, No. 110, and No. 196).*

Typically field density test locations are roughly approximated, usually within a couple of feet. When retests are taken, they were in the same general location (within at least five feet of the previous test location). This situation was discussed with Mr. Peterson and it was agreed that this was adequate.

In reworking the highly variable material, field observations made during replacement suggest that material had changed from its original composition. Spectrum felt that changing the proctor to more closely match the material type provided for a more stringent test to insure that the compaction was meet. If you compare each retest, the modified proctor effectively reduced the calculated compaction providing for a more conservative test. However, to alleviate any concerns or confusion, Spectrum has regenerated the Nuclear Density Results table by inserting the previous proctor information and re-calculating the compaction. This document is attached for your review and use. Regarding the referenced test numbers, the following changes were made:

Test No. 30: The area was reworked and retested twice. The compaction was re-calculated using the original proctor #2.

Test No. 37: As noted on the chart, the area contained pit-run and gravels after it was reworked, but the proctor was changed and compaction recalculated to the original proctor #1 instead of comparing it to CTC-#2 as indicated in the 3/15/96 report.

CTC-#2 was used because the reworked material had pit-run incorporated into it. Spectrum had not performed proctors on "clean material" such as this. It was determined at the January 12, 1996 meeting that the most representative sample was run by CTC-GEOTEK during other site activities.

Test No. 43: The area was reworked and retested. The density was re-calculated using the Spectrum's Proctor #2 because field observations indicated that the material may have changed from the original

Proctor CTC-#1.

Test No. 110: The area was reworked and retested. The density was re-calculated using the original Proctor #3 even though field observations indicated that the material may have changed enough to use Proctor # 7.

Test No. 196: The area was reworked and retested because of the moisture content. The density was calculated using the proctor #7 but on the retest it was listed as # 2. This was a typographical error and was corrected on the 3/20/96 list.

In all cases the most conservative proctor was used to meet the specification.

6) *Initially, two retests were performed on each failing test. Later, one retest was performed on each failing test.*

The additional testing was done in response to the scrutiny on geotechnical testing by CTC-GEOTEK and the CQAO, ERM-Rocky Mountain, Inc. As time passed, Spectrum returned to performing one retest after the area had been reworked in accordance with the specifications.

7) *In-place density tests performed with passing results, but certain tests were retested at a later date. Please explain your reasoning for the retests, such as the previous day's weather conditions, etc.*

Some of the areas that were reworked after testing was performed was to increase the moisture content in the soil so it would be closer to the optimum moisture content. Additionally, if the lift was disturbed during the ripping of frost, it was reworked, retested and met the specification.

Attached are the revised tables. If you have any questions, please contact me at 303-292-1850.

Sincerely,
Spectrum Services, Inc.

Harry E. Moseley, President
ROBCO Phase II Project Manager

SPECTRUM SERVICES -- ROBCO PROJECT
Nuclear Density Results

Test	Date	Location Northing * Easting	Cell	Elev.	Curve #	Moisture	Max. Dry Density (lb/ft^3)	Compaction	Pass/Fail	Remarks
1	12/19/96	682650 * 142275		5228	1	12.0%	111.1	94.6%	Pass	
2		682650 * 142275		5226	1	10.6%	113.0	98.3%	Pass	
3		682700 * 142325		5226	1	10.3%	120.3	102.6%	Pass	
4		682700 * 142325		5226	1	9.3%	119.0	101.4%	Pass	
5		682700 * 142330		5226	1	11.5%	112.5	95.8%	Pass	
6	12/20/95	682625 * 142260		5227	1	12.1%	119.2	101.5%	Pass	
7		682630 * 142285		5227	1	11.6%	117.7	100.3%	Pass	
8		682750 * 142305		5226	1	10.1%	113.5	96.7%	Pass	
9		682620 * 142270		5226	1	10.5%	112.7	96.0%	Pass	
10		682610 * 142270		5227	1	12.9%	103.1	87.8%	Fail	Re-roll & retest
11	12/21/95	682975 * 142265		5228	1	9.4%	112.8	96.1%	Pass	
12		682973 * 142267		5228	1	9.0%	113.6	96.8%	Pass	
13		682980 * 142270		5228	1	7.1%	116.9	99.6%	Pass	
14		682940 * 142290		5228	1	10.1%	105.4	89.8%	Fail	Re-roll & retest
15		682800 * 142285		5228	1	10.7%	121.3	103.3%	Pass	
16		682805 * 142288		5228	1	11.3%	116.9	99.6%	Pass	
17	12/28/95	682770 * 142300		5229	1	8.4%	115.8	98.6%	Pass	
18		682775 * 142290		5229	1	7.8%	115.1	98.0%	Pass	
19		682715 * 142270		5228	1	11.3%	108.8	92.7%	Fail	Water, roll & retest
20		682715 * 142275		5228	1	12.4%	110.8	94.4%	Fail	Water, roll & retest
21		682685 * 142280		5227	1	11.5%	118.1	100.6%	Pass	
22		682690 * 142280		5227	1	10.3%	120.4	102.6%	Pass	
23		682685 * 142285		5227	1	13.7%	111.7	95.1%	Pass	
24	12/29/95	682825 * 142290		5229	1	14.6%	109.9	93.6%	Fail	Re-roll & retest
25		682826 * 142285		5229	1	10.5%	119.9	102.1%	Pass	
26		682860 * 142300		5228	1	7.5%	117.2	99.8%	Pass	
27		682855 * 142295		5228	1	8.6%	111.1	94.6%	Pass	Re-roll & retest
28		682700 * 142300		5227	2	11.0%	108.6	92.1%	Fail	Re-roll & retest
29		682700 * 142305		5227	2	8.8%	107.6	91.3%	Fail	Water, roll & retest
30		682705 * 142305		5228	2	10.4%	106.4	90.2%	Fail	Re-roll & retest
31	01/02/96	682625 * 142275		5228	1	8.9%	117.3	99.9%	Pass	
32		682620 * 142280		5228	2	12.6%	109.8	93.1%	Fail	Re-roll & retest
33		682680 * 142300		5229	1	8.6%	119.2	101.5%	Pass	
34		682680 * 142305		5229	1	8.8%	109.8	93.5%	Fail	Water, roll & retest
30A	01/04/96	RETEST # 30		5228	2	11.7%	111.3	94.4%	Fail	
30B		RETEST # 30		5228	2	12.6%	111.8	94.8%	Pass	
10A		RETEST # 10		5227	1	12.1%	112.1	95.5%	Pass	
10B		RETEST # 10		5227	1	10.9%	114.6	97.6%	Pass	
35		682612 * 142272		5228	1	10.9%	111.8	95.2%	Pass	
36		682613 * 142270		5229	2	10.7%	120.4	102.1%	Pass	
37		682614 * 142271		5230	1	13.9%	111.1	94.6%	Pass	Re-roll & retest
38		682855 * 142265		5230	2	10.8%	112.3	95.3%	Pass	
39	01/04/96	682660 * 142266		5230	CTC #2	9.5%	131.3	100.4%	Pass	Pit-Run Gravels
40		682661 * 142267		5230	CTC #2	9.0%	130.2	99.5%	Pass	Pit-Run Gravels
41		682795 * 142270		5230	1	13.5%	112.1	95.5%	Pass	
42		682796 * 142268		5231	2	15.7%	114.6	97.2%	Pass	
43	01/12/96	682650 * 142160		5223	CTC #1	14.1%	110.0	97.6%	Pass	ctc - 111.1 @ 14.6
44		682600 * 142145		5223	2	11.4%	118.7	100.7%	Pass	ctc - 121.7 @ 11.3
45		682685 * 142150		5223	2	14.7%	113.8	96.5%	Pass	ctc - 119.2 @ 13.7
19A		RETEST # 19		5228	1	12.1%	113.5	96.7%	Pass	

SPECTRUM SERVICES --- ROBCO PROJECT
Nuclear Density Results

Test	Date	Location Northing * Easting	Cell	Elev.	Curve #	Moisture	Max. Dry Density (lb/ft^3)	Compaction	Pass/Fail	Remarks
20A		RETEST # 20		5228	1	10.9%	112.1	95.5%	Pass	
46		682715 * 142273		5230	2	12.7%	112.8	95.7%	Pass	
20B		RETEST # 20		5228	1	11.1%	111.5	96.0%	Pass	
47		682710 * 142290		5232	CTC #2	5.9%	130.9	100.1%	Pass	Pit-Run Gravels
28A	01/12/96	RETEST # 28		5227	2	11.3%	116.9	99.2%	Pass	
29A		RETEST # 29		5227	2	10.7%	113.3	96.1%	Pass	
37A		RETEST # 37		5230	1	12.4%	113.3	96.5%	Pass	
37B		RETEST # 37		5230	1	8.3%	125.9	107.2%	Pass	Pit-Run Gravels
48		682700 * 142305		5231	2	11.9%	113.8	96.5%	Pass	
49		682680 * 142285		6231	2	12.5%	121.4	103.0%	Pass	
50		682678 * 142263		6231	2	12.1%	119.5	101.4%	Pass	
51	01/13/96	682675 * 142170		5224	1	13.7%	100.0	85.2%	Fail	Re-roll & retest
52		682675 * 142170		5224	2	14.7%	106.0	89.9%	Fail	Re-roll & retest
53		682655 * 142140		5224	1	14.2%	111.7	95.1%	Pass	
27A		RETEST # 27		5228	1	14.1%	98.3	83.7%	Fail	Soil was disturbed
27B		RETEST # 27		5228	1	12.9%	104.2	88.8%	Fail	during test cut
34A		RETEST # 34		5229	1	10.6%	116.2	99.0%	Pass	
14A		RETEST # 14		5228	1	12.0%	113.9	97.0%	Pass	
14B		RETEST # 14		5228	1	12.9%	116.0	98.8%	Pass	
27C		RETEST # 27		5228	1	9.7%	112.8	96.1%	Pass	
27D		RETEST # 27		5228	1	9.7%	113.3	96.5%	Pass	
43A	01/15/96	RETEST # 43		5223	2	12.1%	113.9	96.6%	Pass	
43B		RETEST # 43		5223	2	11.6%	120.1	101.9%	Pass	
51A		RETEST # 51		5224	1	13.9%	113.1	96.3%	Pass	
32A		RETEST # 32		5228	2	12.2%	123.8	105.0%	Pass	Using CTC's gauge
32B		RETEST # 32		5228	2	11.3%	125.0	106.0%	Pass	Using CTC's gauge
32C		RETEST # 32		5228	2	11.9%	123.0	104.3%	Pass	Using CTC's gauge
32D		RETEST # 32		5228	2	11.3%	124.4	105.5%	Pass	Using CTC's gauge
24A		RETEST # 24		5229	1	9.3%	125.3	106.7%	Pass	Using CTC's gauge
24B		RETEST # 24		5229	1	11.7%	121.1	103.2%	Pass	Using CTC's gauge
24C		RETEST # 24		5229	1	13.6%	120.1	102.3%	Pass	Using CTC's gauge
54	01/15/96	682940 * 142290		5230	2	12.9%	122.3	103.7%	Pass	1/2 depth Retest
55		682942 * 142280		5230	2	13.3%	123.1	104.4%	Pass	1/2 depth Retest
56		682955 * 142295		5230	2	14.4%	126.0	106.0%	Pass	1/2 depth Retest
57		682980 * 142305		5230	2	14.6%	124.8	105.9%	Pass	1/2 depth Retest
58	01/16/96	682800 * 142200		5223	1	11.5%	111.8	95.1%	Pass	
59		682800 * 142205		5224	2	12.0%	117.3	99.6%	Pass	
60		682600 * 142195		5224	2	10.8%	118.6	100.6%	Pass	
61		682900 * 142180		5223	1	12.5%	111.5	95.0%	Pass	
62		682900 * 142180		5223	2	11.9%	115.2	97.7%	Pass	
63		682850 * 142220		5223	1	12.7%	111.9	95.3%	Pass	
64		682850 * 142220		5223	2	11.2%	112.2	95.2%	Pass	
65		682850 * 142220		5224	1	11.5%	115.9	98.7%	Pass	
66		682845 * 142205		5225	2	11.7%	115.1	97.6%	Pass	
67		682845 * 142205		5225	2	12.0%	115.7	98.1%	Pass	
68	01/20/96	682780 * 142240		5227	2	11.3%	125.3	106.3%	Pass	
69		682780 * 142240		5227	2	10.3%	126.3	107.1%	Pass	
70		682775 * 142240		5227	2	8.3%	126.1	107.0%	Pass	
71		682810 * 142200		5228	2	8.6%	124.2	105.3%	Pass	
72		682810 * 142200		5228	2	8.3%	124.3	105.4%	Pass	

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Test	Date	Location Northing * Easting	Cell	Elev.	Curve #	Moisture	Max. Dry Density (lb/ft^3)	Compaction	Pass/Fail	Remarks
73		682815 * 142200		5225	3	9.9%	125.0	108.9%	Pass	
74		682815 * 142260		5225	2	12.0%	114.4	97.0%	Pass	
75		682820 * 142260		5226	4	8.2%	117.7	101.0%	Pass	
76		682820 * 142260		5227	2	9.8%	117.6	99.7%	Pass	
77	01/24/96	682860 * 142170		5227	1	11.0%	112.3	95.7%	Pass	
78		682860 * 142170		5227	1	10.2%	98.2	83.6%	Fail	Water, roll & retest
79		682860 * 142170		5227	4	9.3%	111.4	95.6%	Pass	
80	01/25/96	682865 * 142175		5228	2	9.9%	116.6	99.1%	Pass	
78A		RETEST # 78		5227	1	9.5%	120.4	102.6%	Pass	
81		682860 * 142175		5227	2	10.1%	115.8	98.2%	Pass	
82		682880 * 142190		5227	2	11.2%	123.2	104.5%	Pass	
83		682884 * 142192		5227	1	9.8%	112.2	95.6%	Pass	
84		682790 * 142200		5229	4	11.3%	105.7	90.7%	Fail	Water, roll & retest
85		682780 * 142180		5228	3	12.5%	112.4	97.9%	Pass	
86		682780 * 142186		5228	4	12.3%	116.7	100.2%	Pass	
87		682785 * 142185		5229	4	11.7%	112.3	96.4%	Pass	
88		682786 * 142186		5229	4	11.6%	112.1	96.2%	Pass	
89		682765 * 142180		5228.5	4	9.0%	99.5	85.4%	Fail	Water, roll & retest
90	01/26/96	682850 * 142205		5229	2	9.7%	124.7	105.8%	Pass	
91		682855 * 142205		5230	2	10.7%	121.0	102.6%	Pass	
92		682855 * 142209		5230	2	10.1%	125.0	106.0%	Pass	
93		RETEST # 89		5228.5	2	10.5%	117.5	99.7%	Pass	
94		RETEST # 84		5229	1	14.1%	112.1	95.5%	Pass	
95		RETEST # 84/89		5229	1	13.6%	111.7	95.1%	Pass	
96		682750 * 142200		5230	2	9.9%	114.9	97.5%	Pass	
97		682747 * 142205		5229	2	9.8%	117.6	99.9%	Pass	
98	02/07/96	682765 * 142200		5230	7	8.1%	126.3	101.9%	Pass	
99		682765 * 142200		5230	7	8.3%	128.5	103.7%	Pass	
100		682765 * 142200		5230	7	9.1%	121.0	97.7%	Pass	
101		682768 * 142200		5230	4	10.9%	114.6	98.4%	Pass	
102		682770 * 142202		5231	2	12.1%	112.1	95.1%	Pass	
103		682725 * 142135		5232	7	11.2%	119.5	96.4%	Pass	
104		682725 * 142133		5231	2	14.1%	112.1	95.1%	Pass	
105		682670 * 142140		5230	3	10.4%	109.9	95.7%	Pass	
106		682667 * 142140		5231	7	9.9%	119.9	96.8%	Pass	
107		682654 * 142195		5229	1	9.6%	113.2	96.4%	Pass	
108		682665 * 142197		5229	1	9.8%	115.9	98.7%	Pass	
109		682653 * 142196		5230	4	12.8%	114.9	98.6%	Pass	
110		682658 * 142195		5231.5	3	16.2%	99.4	88.6%	Fail	Re-roll & retest
111		682800 * 142135		5231	2	9.1%	121.2	102.6%	Pass	
112		682800 * 142135		5231	2	10.7%	112.5	95.4%	Pass	Sand Cone
113		682805 * 142135		5230	2	10.2%	119.3	101.2%	Pass	
110A	02/08/96	RETEST # 110		5231	3	10.4%	121.0	105.4%	Pass	
114		682547 * 142172		5227	7	9.8%	123.8	99.9%	Pass	
115		682545 * 142170		5228	7	10.2%	124.2	100.2%	Pass	
116		682605 * 142205		5227	7	10.5%	121.6	98.1%	Pass	
117		682608 * 142205		5227	2	12.2%	112.4	95.3%	Pass	
118	02/09/96	682700 * 142260		5228	7	8.7%	120.5	97.3%	Pass	1/2 depth Retest
119		682705 * 142255		5229	7	8.4%	122.8	99.1%	Pass	1/2 depth Retest
120		682480 * 142270		5228	2	10.8%	113.8	96.5%	Pass	1/2 depth Retest

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Test	Date	Location Northing * Easting	Cell	Elev.	Curve #	Moisture	Max. Dry Density (lb/ft^3)	Compaction	Pass/Fail	Remarks
121		682485 * 142270		5229	2	8.4%	119.0	100.9%	Pass	1/2 depth Retest
122		682480 * 142245		5229	2	14.2%	109.7	93.0%	Fail	Re-roll & retest
122A		RETEST # 122		5229	2	14.0%	112.8	95.7%	Pass	
123	02/10/96	682490 * 142285		5231	7	8.6%	120.4	97.2%	Pass	
124		682492 * 142266		5230	2	10.6%	113.9	96.6%	Pass	
125		682500 * 142260		5231	2	10.6%	112.8	95.7%	Pass	
126		682505 * 142262		5232	1	11.6%	111.7	95.1%	Pass	
127		682710 * 142165		5232	2	10.4%	114.2	96.9%	Pass	
128		682713 * 142160		5232	2	9.9%	112.3	95.3%	Pass	
129		682808 * 142170		5232	7	8.5%	125.9	101.6%	Pass	
130		682805 * 142175		5232	7	8.6%	127.2	102.7%	Pass	
131		682805 * 142175		5231	7	8.2%	117.9	95.2%	Pass	
132		682810 * 142270		5230	2	11.5%	121.1	102.7%	Pass	
133		682815 * 142270		5231	7	11.1%	122.7	99.0%	Pass	
134		682715 * 142270		5230	2	9.9%	122.5	103.9%	Pass	
135		682710 * 142270		5230	7	8.7%	126.2	101.9%	Pass	
136		682705 * 142270		5232	7	8.6%	122.5	98.9%	Pass	
137		682710 * 142270		6231	2	9.6%	121.9	103.4%	Pass	
138		682790 * 142273		5232	CTC #2	7.0%	134.1	102.5%	Pass	Pit-Run Gravels
139		682820 * 142280		5230	CTC #2	8.5%	128.1	97.9%	Pass	Pit-Run Gravels
140		682815 * 142280		5232	7	7.9%	124.4	100.4%	Pass	
141		682425 * 142340		5230	1	12.1%	111.9	95.3%	Pass	
142		682423 * 142335		5231	2	9.5%	114.4	97.0%	Pass	
143		682430 * 142415		5231	1	9.9%	111.9	95.3%	Pass	
144		682432 * 142420		5230	1	10.9%	111.7	95.1%	Pass	
145		682440 * 142480		5230	1	13.1%	112.1	95.5%	Pass	
146	02/12/96	682450 * 142510		5234	1	12.3%	114.5	97.5%	Pass	
147		682452 * 142510		5235	6	14.6%	109.7	107.2%	Pass	
148		682480 * 142520		5233	6	16.8%	99.9	97.7%	Pass	
149		682478 * 142520		5232	6	17.5%	99.6	97.4%	Pass	
150		682482 * 142520		5234	6	13.9%	106.2	103.8%	Pass	
151	02/15/96	682431 * 142215		5223	1	11.8%	112.3	95.7%	Pass	
152		682433 * 142215		5224	1	12.2%	111.8	95.2%	Pass	
153		682418 * 142215		5226	2	10.7%	114.2	96.9%	Pass	
154		682420 * 142215		5225	2	10.7%	116.4	98.7%	Pass	
155		682421 * 142215		5226	2	11.2%	112.5	95.4%	Pass	
156		682437 * 142450		5234	6	11.6%	106.9	106.5%	Pass	
157		682435 * 142430		5235	6	15.4%	103.7	101.4%	Pass	
158		682470 * 142420		5233	6	17.2%	98.2	96.0%	Pass	
159		682475 * 142420		5233	6	17.6%	103.2	100.9%	Pass	
160		682510 * 142385		5232	6	15.9%	104.3	102.0%	Pass	
161		682510 * 142380		5233	6	16.9%	98.5	96.3%	Pass	
162		682510 * 142375		5234	2	10.6%	115.0	97.5%	Pass	
163		682465 * 142305		5231	6	14.9%	98.3	96.1%	Pass	
164		682468 * 142305		5233	2	11.3%	113.4	96.2%	Pass	
165		682462 * 142305		5232	6	16.6%	103.6	101.3%	Pass	
166	02/16/96	683015 * 142350		5230	1	12.7%	111.9	95.3%	Pass	
167		683018 * 142350		5231	2	10.9%	114.1	96.8%	Pass	
168		683020 * 142350		5232	1	10.9%	111.5	95.0%	Pass	
		683024 * 142350		5226	7	8.9%	121.8	98.3%	Pass	

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Test	Date	Location Northing * Easting	Cell	Elev.	Curve #	Moisture	Max. Dry Density (lb/ft^3)	Compaction	Pass/Fail	Remarks
170		683022 * 142330		5227	1	10.7%	111.8	96.2%	Pass	
171		683020 * 142330		5228	2	12.0%	112.4	95.3%	Pass	Sand Cone
172		683016 * 142330		5229	1	10.4%	111.7	96.1%	Pass	
173		683080 * 142285		5221.5	7	10.7%	124.6	100.6%	Pass	
174		683063 * 142290		5223	7	11.3%	123.8	99.9%	Pass	
175		683067 * 142285		5224	7	9.6%	124.0	100.1%	Pass	
176		683080 * 142285		5233	2	11.9%	117.5	99.7%	Pass	
177	02/19/96	683048 * 142350		5235	2	11.6%	117.0	99.2%	Pass	ctc - 122.1 @12.1
178		683045 * 142350		5234	2	13.2%	118.6	98.2%	Pass	ctc - 121.0 @13.0
179		683050 * 142370		5233.5	8	15.3%	108.8	104.4%	Pass	ctc - 111 5 @13.3
180		683050 * 142370		5234.5	8	15.8%	108.9	104.5%	Pass	ctc - 112.1 @15.5
181		683156 * 142365		5236	7	10.5%	118.2	95.4%	Pass	
182		683146 * 142375		5236	2	11.5%	114.2	96.9%	Pass	
183		683144 * 142376		5236	7	10.7%	122.2	98.6%	Pass	
184	02/22/96	682700 * 142490		5228	2	13.0%	117.3	99.6%	Pass	
185		682702 * 142490		5229	2	13.3%	118.1	100.2%	Pass	
186		682704 * 142492		5230	7	10.5%	126.3	101.9%	Pass	
187		682704 * 142488		5231	2	9.9%	116.8	99.1%	Pass	Sand Cone
188		682725 * 142480		5233	7	9.8%	126.9	102.4%	Pass	
189		682715 * 142480		5233	2	10.6%	115.3	97.8%	Pass	
190		682605 * 142530		5235	7	8.6%	119.3	96.3%	Pass	
191		682610 * 142524		5236	2	9.5%	112.8	95.7%	Pass	
192		682565 * 142540		5232	7	10.4%	121.6	98.1%	Pass	
193		682565 * 142540		5232	7	11.9%	122.2	98.6%	Pass	
194		682568 * 142540		5233	7	8.3%	122.3	98.7%	Pass	
195		682570 * 142540		5235	7	8.3%	131.4	106.1%	Pass	
196	02/25/96	682850 * 142320		5235	7	6.8%	120.3	97.1%	Pass	Water, roll & retest
197		682855 * 142320		5234	7	6.7%	120.5	97.3%	Pass	Water, roll & retest
198	02/29/96	682412 * 142695		5228	2	9.7%	116.1	98.5%	Pass	
199		682417 * 142593		5228	2	10.1%	112.1	95.1%	Pass	
200		682419 * 142588		5230	2	9.8%	116.9	99.2%	Pass	
201		682424 * 142585		5231	2	9.7%	112.8	95.7%	Pass	
202		682427 * 142582		5232	2	9.4%	118.4	100.4%	Pass	
203	03/01/96	SE corner of W2		5233	2	10.1%	113.0	95.8%	Pass	
204		SE corner of W2		5234	2	9.7%	112.3	95.3%	Pass	
205		SE corner of W2		5235	1	9.9%	111.9	95.3%	Pass	
206		SE corner of W2		5236	7	9.0%	119.1	96.1%	Pass	
196A		RETEST # 196		5235	7	9.1%	119.9	96.8%	Pass	Water, roll & retest
208		683190 * 142310		5223	7	9.1%	119.9	96.8%	Pass	
209		683195 * 142325		5224	7	8.4%	120.1	96.9%	Pass	
210		683200 * 142330		5225	1	12.1%	111.5	95.0%	Pass	
211		683200 * 142330		5226	7	9.9%	124.9	100.8%	Pass	
212		683200 * 142360		5227	7	9.6%	118.3	98.5%	Pass	Sand Cone
213		683190 * 142340		5228	7	8.8%	122.9	99.2%	Pass	
214		683190 * 142340		5229	7	9.4%	119 4	96.4%	Pass	
215	03/02/96	683240 * 142330		6231	7	9.8%	117.9	95.2%	Pass	
216		683425 * 142335		6230	2	10.1%	112 2	95.2%	Pass	
197A		RETEST # 197		5234	7	8.4%	126.5	102.1%	Pass	
217		W1 East Toe		5230	2	10.0%	113.5	96.3%	Pass	
218		W1 East Toe		5231	2	9.8%	116.7	99.0%	Pass	

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Test	Date	Location Northing * Easting	Cell	Elev.	Curve #	Moisture	Max. Dry Density (lb/ft^3)	Compaction	Pass/Fail	Remarks
219		683220 * 142350		5231	7	9.6%	119.1	98.1%	Pass	
220		683215 * 142340		5232	7	11.3%	119.9	96.6%	Pass	
221		683215 * 142342		5293	7	10.5%	118.5	96.6%	Pass	
222		W1 East Toe		5232	2	10.1%	113.7	98.4%	Pass	
223		W1 East Toe		5233	2	10.2%	116.6	98.8%	Pass	
224		W1 East Toe		5234	2	10.8%	112.2	96.2%	Pass	
225		683180 * 142356		5234.5	7	8.1%	124.3	100.3%	Pass	
226		683190 * 142356		5233.5	7	9.2%	124.7	100.6%	Pass	
227	03/03/96	683220 * 142360		5235	2	9.8%	116.6	98.8%	Pass	
228		683230 * 142355		5235	7	8.6%	119.5	96.4%	Pass	
229		683240 * 142350		5236	2	9.9%	115.6	98.0%	Pass	
230		683235 * 142345		5237	2	9.7%	116.4	98.7%	Pass	
231		683210 * 142350		5238	7	9.8%	126.4	102.0%	Pass	
232		683190 * 142345		5238	7	10.5%	118.0	96.2%	Pass	
233		682910 * 142340		5236	7	9.3%	118.8	96.9%	Pass	
234		682920 * 142345		5237	2	9.7%	115.6	98.0%	Pass	
235		NE corner of W2		5235	2	9.7%	112.4	95.3%	Pass	
236		NE corner of W2		5238	7	8.4%	127.2	102.7%	Pass	
196B		RETEST # 196		5235	7	10.1%	119.5	96.4%	Pass	
237	03/04/96	NW Slope C-zone		5232	7	10.1%	118.5	95.6%	Pass	
238		NW Slope C-zone		5233	7	11.2%	119.1	96.1%	Pass	
239		NW Slope C-zone		5234	7	9.4%	117.7	95.0%	Pass	
240		NW Slope C-zone		5235	2	9.9%	116.5	98.8%	Pass	
241		NW Slope C-zone		5236	7	10.1%	118.1	95.3%	Pass	
242		NW Slope C-zone		5237	7	11.1%	119.9	96.8%	Pass	
243		683208 * 142355		5238	2	10.1%	116.3	98.6%	Pass	
244		683225 * 142350		5238	2	11.0%	115.3	97.8%	Pass	
245		683240 * 142343		5239	2	9.8%	116.5	98.8%	Pass	
246		683245 * 142345		5239	2	9.8%	114.3	96.9%	Pass	
247		682180 * 142360		5239	2	10.1%	117.1	99.3%	Pass	
248		683150 * 142370		5239	2	9.9%	114.2	96.9%	Pass	
249		683150 * 142370		5239	2	9.2%	114.2	96.9%	Pass	

Proctor Summary

Proctor #	Opt. Moisture Content %	Max. Dry Density (lb/ft^3)
1	12.7	117.4
2	12.7	117.9
3	13.5	114.8
4	11.9	116.5
5	12.7	116.3
6	n/a	n/a
7	10.6	123.9
8	19.8	102.3
CTC #1	13.8	112.8
CTC #2	8.8	130.8

Sand Cone Summary

Test #	Moisture Content	In-Place Density
112	11.9%	113.7
171	12.6%	113.4
187	9.8%	116.2
212	9.5%	116.0

SPECTRUM SERVICES --- ROBCO PROJECT
Nuclear Density Results

Test	Date	Location Northing * Easting	Cell	Elev.	Curve #	Moisture	Max. Dry Density (lb/ft^3)	Compaction	Pass/Fail	Remarks

GRADATION SUMMARY

		SEIVES					Atterbergs If applicable	
Number	Location	3/4"	3/8"	#4	#8	#200	LL,PI	USCS
GD-#1	W1 - 5227	87	77	56		24		SM,a-1-b
GD -#2	W1 - 5228	83	76	54		18		SM,a-1-b
GD -#3	W1 - 5228	90	81	63		24		SM,a-1-b
GD -#4	W1 - 5229	79	75	59		18		SM,a-1-b
GD -#5	W1 - 5230	86	77	64		23		SM,a-1-b
GD -#6	W3/W4 - 5224	88	79	70		22		SM,a-1-b
GD -#7	W3/W4 - 5225	92	78	66		18		SM,a-1-b
GD -#8	W3/W4 - 5226	93	84	73	56	15		SM,a-1-b
GD -#9	W3/W4 - 5229	94	86	76	61	19		SM,a-1-b
GD -#10	W3/W4 - 5228	93	84	78	64	23		SM,a-1-b
GD -#11	W3/W4 - 5230	90	83	75	65	28	30,9	SC,a-2-4
GD -#12	W2 - 5234	93	85	77	69	27	28,7	SC,a-2-4
GD -#13	W2 - 5235	82	75	67	58	19		SM,a-1-b
GD -#14	W2 - 5236	86	79	72	62	20		SM,a-1-b
GD -#15	C-Zone - 5230	71	63	55	46	16		SM,a-1-b
GD -#16	C-Zone - 5232	95	86	79	64	20		SM,a-1-b
GD -#17	C-Zone - 5233	83	76	70	59	18		SM,a-1-b
GD -#18	C-Zone - 5236	79	71	64	54	19		SM,a-1-b
GD -#19	C-Zone - 5237	80	72	63	53	17		SM,a-1-b
Proctor 1	W1 - 5227	92	80	60		28	33,11	SC,a-2-6
Proctor 2	North Zone	88	80	80		19		SM,a-1-b
Proctor 3	W1 - 5228/5229	85	77	70		19		SM,a-1-b
Proctor 4	W1 - 5229	90	83	79	71	33	35,14	SC,a-2-6
Proctor 5	Split w/CTC in W1	81	74	66	55	17		SM,a-1-b
Proctor 7	Split w/CTC in W3	84	78	72	62	22		SM,a-1-b
Proctor 8	Nuke Test #148	81	74	67	58	25		SM,a-1-b